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CONTENTS AND SUBJECT INDEX

SPECIAL ARTICLES:

- Individualism in Medicine.** By W. S. Thayer, Baltimore, Maryland377
- Pancreatitis—Its Treatment, As Related to Gall-Bladder Infection.** By J. H. Breyer, Pasadena382
Discussion by C. G. Toland, Los Angeles; Clarence E. Rees, San Diego; Charles A. Dukes, Oakland.
- Postoperative Massive Atelectasis.** By Mary E. Mathes and Emile Holman, San Francisco386
Discussion by Frederick Leet Reichert, San Francisco.
- Certain Operative Procedures Employed in Ophthalmology.** By Joseph L. McCool, San Francisco390
- Acute General Peritonitis.** By Robertson Ward, San Francisco395
Discussion by Frank W. Lynch, San Francisco; Wayland A. Morrison, Los Angeles.
- Psychiatry in a General Hospital.** By Charles Lewis Allen, Los Angeles398
Discussion by C. A. Wright, Los Angeles; Josephine Jackson, Pasadena; Henry G. Mehrtens, San Francisco.
- Acute Intestinal Obstruction—Its Treatment.** By W. B. Holden, Portland, Oregon403
- Chronic Pyuria in Children.** By Albert M. Meads, Oakland405
Discussion by W. W. Cross, Oakland; William E. Stevens, San Francisco; George G. Reinle, Oakland.
- Postoperative Pulmonary Embolism.** By H. K. Bonn, Los Angeles408
Discussion by W. H. Olds, Los Angeles; Clarence G. Toland, Los Angeles; Philip H. Pierson, San Francisco.
- The Aschheim-Zondek Hormone Test for Pregnancy.** By Harry E. Kaplan, Stockton412
Discussion by John C. Irwin, Los Angeles; Ludwig A. Emge, San Francisco; Gertrude Moore, Oakland.
- Painful Ear Nodule of Winkler and Foerster.** By George D. Culver, San Francisco414
Discussion by Laurence R. Taussig, San Francisco; H. J. Templeton, Oakland; Samuel Ayres, Jr., Los Angeles.
- An Old Book by Benjamin Rush—The Lure of Medical History.** By Gilbert R. Owen, Los Angeles418

CLINICAL NOTES AND CASE REPORTS:

- Congenital Cystic Disease of the Lung.** By Rulon S. Tillotson, Woodland420
- A Closed Method for Draining Acute Empyema.** By J. E. Strode, Honolulu, T. H.422
- Tumors of the Carotid Body.** By W. H. Budge, Ogden, Utah423

BEDSIDE MEDICINE:

- Obscure Gall-Bladder Disease.**425
Discussion by Stanley H. Mentzer, San Francisco; Sterling Bunnell, San Francisco; Charles T. Sturgeon, Los Angeles; Thomas O. Burger, San Diego.

EDITORIALS:

- Rockefeller and Hooper Foundation Reports**428
- A Los Angeles Wine Tonic Ordinance—A Good Example of A. M. A. President Thayer's "Ill-Considered Proscriptions"**429
- Telephoned Narcotic Prescriptions**431
- Some Trends in Hospital Treatment, in Relation to the "High Cost of Medical Care"**431

MEDICINE TODAY:

- Allergy—Impressions Gathered From the Portland Meeting.** By Edward Matzger, San Francisco434
- Pituitary Tumors and Skeletal Changes.** By Cyril B. Courville, Los Angeles434
- Bacterial Allergy.** By F. M. Pottenger, Monrovia435
- Economic Value of Mosquito Control.** By W. H. Manwaring, Stanford University436
- Prostatic Massage.** By Roger W. Barnes, Los Angeles436

STATE MEDICAL ASSOCIATIONS:

- California Medical Association**437
- Nevada State Medical Association**442
- Utah State Medical Association**443

MISCELLANY:

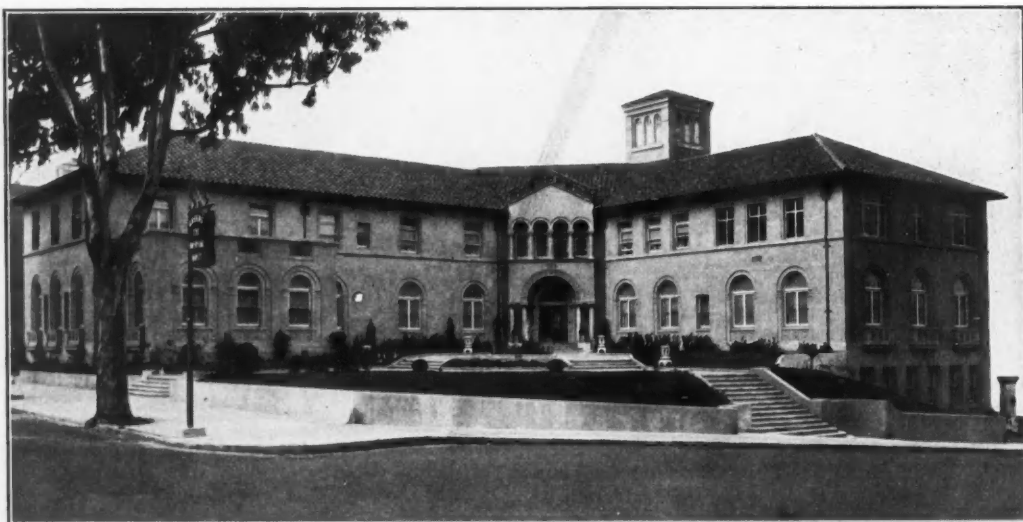
- News**444
- Correspondence**444
- Twenty-Five Years Ago**446
- Department of Public Health**447
- California Board of Medical Examiners**448
- Directory of Officers, Sections, and County Units of the California Medical Association**Advertising page 2
- Book Reviews**Advertising page 11
- Books Received**Advertising page 14
- Truth About Medicines**Advertising page 18

ADVERTISEMENTS—INDEX:

-Advertising page 8

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CALIFORNIA AND WESTERN MEDICINE

VOLUME XXXI

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INDIVIDUALISM IN MEDICINE*

By W. S. THAYER, M. D.
Baltimore, Maryland

THESE are days of what the world calls "large business" and of coöperation in all phases of life. In the world's current the medical art has been carried along with all other activities. Things are done on a large scale. Wholesale methods have invaded the practice of medicine as surely as they have commerce. Large institutions and large corporations feel obliged to provide medical care for their personnel. Where forty years ago a man practised for a lifetime alone, or with, perhaps one assistant, today men begin the practice of medicine in groups. One does not consult a physician, he consults that which is called a "clinic." And nine times out of ten the word "clinic" is misused, as the one thing which the ordinary so-called "clinic" does not possess is a bed. The patient consults not one physician but a group of doctors, and, on many sides, regret is expressed that the personal influence of the family physician is going out of existence. The outward appearance of the world changes rapidly with time. Boys and girls look and behave differently, and the old shake their heads and lament and call the world degenerate just as they always have. Through it all the pendulum of custom and fashion swings away from one extreme to the other, while the old world rolls on, and whatever variations the chart of human progress may show from decade to decade, or century to century, mankind slowly continues to improve. But man is a fairly old animal on this earth and while the curve of human progress has its ups and downs, and the pendulum of fashion and custom swings away from one extreme to another, yet the fundamental characteristics of the individual human being and his needs remain pretty much the same. We lament the disappearance of the family physician. From certain standpoints such a lament is thoroughly justifiable, but we sometimes forget how infinitely better off the average human being is than he was in the days of the old-fashioned family practice.

Think for a minute of the difference between the duties of the young man starting out in medical practice today and those which confronted his grandfather in a day when we knew little or nothing about the cause of infectious

disease. The physician's duty then, lay almost entirely in the care of the sick or the wounded. The best that one could do in those days was to protect one's patients from direct contagion. That was all. And even then how blind we were. Today the element of prophylaxis plays a large part in medical practice. As Sir Robert Philip beautifully expressed it, two years ago in his address before the British Medical Association, the physician today is a gardener in the garden of health. His main object is to keep the human plant free from disease and to see to it that from year to year the quality of the human flower is improved. It would be a poor gardener who fancied for a minute that his main problem was caring for diseased plants. With plants we regard that a waste of time. This is perhaps the greatest change that has come over medical practice, that is, the realization by physician and public that the doctor's main function is prevention of disease and instruction of his patients as to how to escape disease; that the care of disease is becoming more and more the occasional rather than the main function of the doctor. The day will never come in our time or in the time of our children's children when care for the sick will not be a sacred function of the doctor. But more and more his most vital task is coming to be that of an adviser and protector against disease. Think of our powers in the protection against contagions such as diphtheria and scarlet fever, malarial fever and yellow fever, typhoid fever, cholera and plague and tuberculosis, most indeed of the most dreaded scourges of mankind. And consider how generally now the physician in the care of the individual patient, is concerned in safeguarding the welfare of the family and the public at large. This is perhaps one of the greatest changes that has come over the general practice of medicine within the last several generations. But think also of the immense advances in our knowledge, physical, chemical, physiological, bacteriological, serological, which have brought this about, and consider how much more difficult and how much more complicated the practice of medicine has become. We have an immensely greater power than we had in the past. Our knowledge has increased tenfold. But that knowledge and that power have been gained by an insight into the complexities of human physiology and pathology the acquisition of which has been gained by

* Address delivered before the Utah State Medical Association on July 3, 1929.

years of study; the transmission of which to the student demands an education much broader than it was, a preparation much longer and more time-taking, and the daily employment in practice of methods of study, physical, chemical, bacteriological, serological, more complicated than anything of which our grandparents dreamed. Thirty or forty years ago a man with his microscope and a little laboratory in his house could alone do most of the work that was necessary or desirable in his general practice. Today that is impossible, and, in order to satisfy his conscience, he turns often to the assistance of the laboratory technician. The establishment of local, city or county laboratories or health centres is bringing such means more and more within the reach of practitioners in the larger centres and in outlying districts and, by and large, there can be no doubt that the average human being is immeasurably better off than he was in the seventies or the eighties before specialization became so general. But human customs and fashions swing as a pendulum, and we seem by nature unable to restrain ourselves from going to excess. Let us consider some of the fashions in which we drift toward excess at the present time.

I. NEGLECT OF THE DIAGNOSTIC ART

No man can be a first-class general practitioner equally skilled in all branches of medicine. No man can be a practitioner of general medicine, master of the fundamental methods of diagnosis and treatment and at the same time skilled in all the technical details of bacteriological, serological, physical and chemical diagnostic procedures. He must call upon his friends and neighbours, upon private, city or county laboratory, from time to time for help or assistance. But this assistance while valuable, is not the essential element in practice. If he be a properly trained man this assistance, helpful as it is, is usually confirmatory. Certain fundamental capacities must be his; without them he cannot properly practise medicine.

He must have had a reasonably good anatomical and physiological basis. He must have had a good training in pathological anatomy and a familiarity with gross and microscopical pathological changes, and he must have a good basic knowledge of pathology in its true sense, that is, of the science of disease; a knowledge as to the aetiology of the contagious diseases, the manner of their origin, the dangers of contagion; a reasonable acquaintance with the physiological processes, normal and pathological, associated with diseases of the lungs and heart, the gastro-intestinal and genito-urinary tracts; a fair knowledge of the anatomy and physiology of the nervous system; and he must know how to apply this knowledge in reaching a diagnosis. He must know how to use his five senses in detecting changes in the internal organs, organic and functional, including a familiarity with the simpler instruments of exploration, stethoscope, ophthalmoscope, laryngo-

scope; that is, he should be as good a physical diagnostician as were the well-trained physicians of 1890. Without this basis a man cannot practise medicine intelligently. In order to be a good physical diagnostician one must study and practise daily the art of physical diagnosis on living patients. He must be capable by inspection and palpation and percussion and auscultation to make out the size and position of thoracic and abdominal organs, to determine the presence of fluid or air in the chest or the presence and significance of intrapulmonary changes. He must be able to detect and distinguish that which is unusual from that which is abnormal. He must be a pathologist good enough to be able to interpret those physical signs so as to have a clean-cut opinion of his own. He who has reached this point has acquired the necessary feet on which to stand. He, alone, can profit by the diagnostic refinements of recent years. To him the great mass of information brought to us in the past forty years by the newer methods of diagnosis, physical, such as the x-ray, the polygraph, the electrocardiograph, chemical, such as the beautiful and rapid modern methods of determining the quantitative variations in many constituents of the body fluids, the nitrogen partition, the amount of sugar in the blood, the CO_2 volume per cent, bacteriological, such as those afforded by the efficient methods of culture from the circulation, and serological, such as the determination of complement fixation or agglutination—to him such information as this is intelligible and immensely helpful. To him who has not acquired that which will, I fancy, for all time be the necessary foundation for the intelligent practice of medicine, namely the art of physical diagnosis—to him who has not acquired this the reports of special tests or observations by another are, too often, worse than useless. Every one of these reports is complementary to this necessary basis, the fundamental power to make an intelligent physical examination and to interpret one's results. He who cannot interpret that information which is to be elicited by an accurate physical examination is helpless. No one can do it for him. Least of all the technician who furnishes him a chemical report or sends him an account of a roentgenogram.

The man who depends upon an x-ray alone to make a diagnosis of pneumonia is a danger to the public. What is roentgenology but the study of lights and shadows; he who would make a positive diagnosis of pneumonia from a shadow alone is guilty of a rash and temerarious act. The information supplied by an x-ray plate is often of immense complementary value. Alone and without the information afforded by the history, the appearance of the patient and the results of physical examination, it is often of no more value than that afforded by percussion alone—indeed less. For he who percusses the chest cannot fail to observe the patient. No one technical advance in my lifetime has been of greater diagnostic aid to the practitioner than the introduction of roent-

genology. Yet I regret to say that the pendulum of medical fashion in its almost automatic swing, has led many worthy men to neglect the teaching and the practice of physical exploration to such an extent that it is sadly common today to find men who regard themselves as clinicians ready to accept the report of a roentgenologist utterly incapable himself of making a physical examination; too often, indeed unable to make a proper physical examination themselves. This is not to practise medicine. The roentgenologist may be a man of good general medical training who has had a considerable clinical experience, who follows his patients to operation or necropsy or recovery and confirms his suspicions by a study of the results; or he may be a pure technician whose opinion, gained in the laboratory alone, is of little value. Neither physician nor roentgenologist is capable of expressing an opinion of value if he be not a fairly good pathological anatomist.

II. THE LACK OF COÖPERATION

And then there is another point—the understanding and practice of true coöperation. Neither practising physician nor roentgenologist should be willing to give a flat-footed opinion without consultation, one with the other. The physician who desires a plate should always, in writing or personally, consult with his colleague, give him the benefit of his information, and if there is any question of an unusual appearance or pathological change he should always see the plates himself before expressing an opinion. One cannot “pass the buck” in medicine. One must play the game. And one must play fairly and squarely and openly with his colleague.

I have spoken elsewhere of an instance of congenital cardiac disease in which the patient consulted a roentgenologist without communicating to him the history. The family physician knew from definite physical signs that the manifestations were due to an open ductus Botalli and rightly suspected that the paralysis of the left recurrent laryngeal nerve from which she suffered, was dependent on pressure on the nerve by a dilated pulmonary artery. The roentgenologist promptly interpreted the enlarged second curve on the left of the cardiac shadow as evidence of a dilated left auricle, and unhesitatingly informed the physician that her patient was suffering from mitral stenosis with an enlarged left auricle pressing on the recurrent laryngeal.

A simple physical examination with the history of the case and a little intelligent coöperation would have settled the question.

Nowhere is the lack of proper coöperation more evident than in the diagnosis of pulmonary tuberculosis. Certain shadows on plates of the chest are suggestive, almost convincing sometimes, of tuberculous changes. But a proper interpretation of the plates can never be made without a careful consideration of the clinical history and physical signs. Too often, alas, in everyday practice, the clinician demands and accepts the unaided diagnosis of the radiologist who may give important

testimony but is quite incapable of expressing a positive opinion unless he is a good clinician and familiar with the history and actual condition of the patient. There is a deplorable tendency today to demand of the roentgenologist, and to accept from him positive opinions which are quite unjustifiable.

This was strikingly evident during the war when at the outset considerable numbers of healthy individuals were returned from Europe as tuberculous as a result of the thoughtless acceptance by clinicians of unjustifiably positive diagnoses by young and inexperienced roentgenologists without clinical basis.

The fault is on both sides; it is a sad lack of proper coöperation. Were it not tragic sometimes, it would be ridiculous, the implicit confidence which some physicians place in the roentgenologist's report, and the finality with which the roentgenologist sometimes expresses himself with regard to appearances which can be intelligently interpreted only after a careful consideration of the history, the physical examination, and the clinical course of the case.

As any clinician of experience knows, there are instances of pneumonia in which at times obvious intrapulmonary changes fail, for some time, to cast a shadow. In one instance, indeed, I have known this to be true several hours before death in what proved to be a grey hepatization, confirmed at necropsy a few hours later. Exception? Yes, but exceptions that one cannot afford to forget.

Again, the extreme reserve with which one should pass judgment on defects in the gastric outline in connexion with the suspicion of organic disease is familiar. Simple peripyloric adhesions or pressure by adjacent masses may result in pictures which, if not very carefully considered and controlled, may lead to unfortunate error.

It is a sad commentary on human weakness, the manner in which the discovery of a new method of investigation of great help, such as roentgenology, has led the medical public to neglect those fundamental methods of study which are far more important in themselves. It is very important for us all to remember that while roentgenology has greatly strengthened our diagnostic power it has not simplified the procedure necessary to make an accurate diagnosis. In some instances it has revealed what we could only suspect before, and sometimes that which we have not suspected. More often the results are confirmatory of that which the good clinician has already suspected. From the shadow alone, without a suitable physical examination, we should make far more errors than we should, or did, by well carried out physical diagnosis before the days of roentgenology. It is poor practice to pass the buck, as it were, to the roentgenologist, and accept his diagnosis which is based on information inferior to that lying under the eyes of the clinical attendant. The same is true with regard to every other special diagnostic method. None of these can be utilized properly unless associated with

the results of a careful clinical study. All are complementary to proper clinical study. If it be necessary, and it undoubtedly is, for the laboratory student to devote himself largely to his own special branch, whatever that may be, so is it also vital that the clinician should be master of the art of physical exploration. To practise medicine they must work together and coöperate loyally.

III. THE ABUSE OF SO-CALLED COÖPERATIVE METHODS—THE INDIVIDUAL RESPONSIBILITY OF THE DOCTOR

As I said in the beginning, with all the changes in our fashions of practice, the character of the human being and his needs remain essentially the same, and it is just as true today as it was one hundred years ago, that on the average the doctor accomplishes more by his intelligent human interest in and his individual attention to the patient than he does by anything else. He cannot give proper attention to his patient unless he is his trusted friend and adviser, and unless he shoulders the responsibilities imposed on him by the human being who seeks his advice. Coöperation is absolutely necessary properly to practise medicine today—coöperation between the practitioner and those colleagues whose advice he must seek with regard to certain studies which demand the attention of a special student. But the practitioner must also coöperate with his patient. For the patient who consults him he must take a heavy, individual responsibility.

This leads me to the main point in this talk, namely, the nature of this responsibility and the fashion in which I think it is often misunderstood. In order to meet the problems before them, physicians today are very commonly banding together into groups representing the various branches of medicine and surgery. And more and more commonly it is becoming the custom to send the patient at the outset from one physician to another, letting one man, let us say, examine the thorax, another the abdomen, another the genito-urinary tract, another the nose and throat, another the eyes, another, perhaps, the nervous system. This procedure is sometimes carried out in a rather routine fashion. And the men who do this say often with great earnestness, that one has no right to examine a patient without doing all that he can, and that he who neglects a thorough examination may pass over the vital point. I respect this argument, but, at the same time, I believe it to be fallacious. Such so-called "clinics" rarely succeed in reaching as satisfactory a conclusion with regard to the condition of the patient, they rarely succeed in helping the patient as do those individuals who assume, at the outset, an individual responsibility for the patient, and consider each patient as an individual. Such routine treatment is easier; it is sometimes necessary under local conditions and circumstances, but where it is possible the physician should always, it seems to me, seek to do what he can individually at first. He cannot pass the history taking entirely to a younger man. If the history be taken by another, he must go over

this at length with the patient himself. He must examine the patient thoroughly himself and he must determine himself when it is necessary to seek special advice and from whom such advice is desirable. The human element is still the most important element in the practice of medicine. It is not a gynecologist whose opinion I desire with regard to Mrs. X. It is the gynecologist. With regard to difficult matters in connexion with the ear or the accessory sinuses of the nose, it is only a skilled colleague whose opinion I desire; it is the rhinologist whose personality and special qualifications seem to fit the individual and the situation. One should never send a patient to another without having a good reason for so doing. He would be a sorry practitioner of medicine who had not some opinion of his own with regard to most matters concerning which he seeks advice before he refers the patient to another. In my experience I have known very few so-called "diagnostic clinics" the opinions emanating from which have a value equal to that of one really good man who had given time and consideration to his patient. Again the patient is often sadly misled by the complicated reports put in his hands. These reports often fill him with suspicions, fancies and uncertainties. It is very easy to write down for a patient the results of a collective examination but to write a letter to the patient summing up the result of one's studies in the language which will best explain to him the important points; which, at the same time, will help him and guide him on the way that he should go, and give him the courage without which he can do little—this is one of the most difficult tasks in medicine. This is a task which can only be carried out by that patient's individual physician, at least by that physician who has given his time and thought to a careful examination and study and direction of the investigation of his patient. Some, alas, of these "diagnostic" groups are doing exactly what so-called Life Extension Institutes have done, with the same good intentions and, I firmly believe, often with the same evil effects. Such fashions of procedure eliminate the necessary individualism from practice and substitute for it that which is wrongly regarded as coöperation. I do not mean to condemn those associations of physicians, practising different branches of the medical and surgical art, which render it easier to make a combined examination of the patient when necessary, but I do feel that the so-called coöperative practice on a large scale is bad medicine. It is often true that a study made by such a group is less complete than that made by a single man. The difference between the examination made by a group and that by a single careful man who consults his colleague when necessary, is much like the difference between a book on medicine written by a group of men and that written by a single careful student. In the former there are good chapters but many holes. Try to look up some recondite question in some of these "systems." The lack of completeness that is evi-

dent everywhere is despairing. The doctor cannot escape an individual responsibility for the patient who consults him and he cannot escape the penalty that medical advance has put upon him—namely that he must give more time to the individual than he used to.

The assistance that the practitioner of internal medicine most needs is that afforded by studies in the physical, chemical, bacteriological and serological laboratories. More and more in larger cities, physicians practising general medicine are coöperating in a valuable and practical sense, in that although independent in practice they so arrange their consulting rooms as to be adjacent to a common laboratory in which mutually, they are able to employ the necessary technicians and to provide the necessary apparatus. In this manner they are enabled, at a moderate expense, to gain the information which is so often desirable. This is intelligent coöperation and enables the practitioner to maintain the position which he should seek to hold, of friend and director and adviser to his patient—an adviser who consults his colleagues not as a routine practice but for a reason—who considers not only his patient's body but his mind and his pocket—who is conscious of the heavy responsibility which he assumes in giving medical advice. Believe me, he who does not assume the responsibility for his patients, who does not consult with his consultants, is a poor practitioner of the medical art.

But I am answered: "You are an old fogey. These are not business methods. The man who does that kind of thing can't begin to see a sufficient number of patients to earn his living." But that is just the point. Medicine is regarded by too many of our colleagues as a business. It is not. It is a profession, and he who makes it a business degrades his profession, and is not doing the square thing by his patients. For a few successful surgeons, for a few specialists and fewer men in general medicine who acquire especial skill or especial reputation, it is possible to make a large income, but to gain riches in medicine, for him who does not combine his practice with business interests of another sort, is difficult, indeed almost impossible. However, to make one's living respectably is the privilege of almost every honest medical man. The regarding of medicine as a business by some has had a sad influence on the reputation of the medical profession as a whole. Every physician gives, of course, a considerable part of his time to practice which is to a great extent, gratuitous, but the man who assumes the right to make up for this by making exceptional charges to those whom he fancies are well-to-do and can afford to meet them; in other words, the man who speculates on his patients has brought ill repute to the profession. A man should know what he charges for a certain service and charge it whenever there is no question, and reduce it when he feels that he must; but the well-to-do have a perfect right to resent exceptional charges.

Often enough he whose income may be large has demands which are larger, and it is not for me to determine the charities which my neighbour may choose to support.

Let me sum up in a few words the theme of my talk.

1. The great advances, diagnostic and therapeutic, of the last several generations are leading us sometimes to forget that while they have enlarged our conceptions, have increased our diagnostic powers, have strengthened our therapeutic art, while prophylactically and therapeutically, indeed, they have sometimes replaced our former groping methods by accurate, almost specific means of prevention and cure, yet from a diagnostic standpoint, in scarcely a single instance have they replaced the necessity for the older, simpler methods of physical exploration. These remain fundamental and vital, and he who is not a master of the art of physical diagnosis in the stricter sense, is not only unable to use or evaluate properly the results of those newer methods of study, physical, bacteriological, serological, chemical, which are purely complementary to the basic physical methods—not only is he unable to use them properly, he is often misled by them. The practitioner of medicine must be, before all, a master of the art of physical exploration.

2. Secondly, properly to practise medicine one must assume the responsibility for his patient. He must remember that on his human understanding and on his personal advice and encouragement and explanation depend that patient's health and future. He cannot pass that duty to another. He must make use of an increasing number of special methods of study which often have to be pursued by colleagues, but in making use of these he must do so intelligently, consulting with his colleague. Only in such manner can he obtain the full assistance which he desires. Coöperation in the mere sense of division of responsibility is not coöperation. The doctor consulted by the patient must still regard himself as the patient's individual adviser if he desire to do his whole duty and obtain the best results.

3. He will practise better medicine who coöperates with his colleagues in the sense of uniting perhaps with a number of other practitioners who between them support those laboratories and technicians necessary to supply them the desirable physical, clinical, roentgenological, bacteriological and serological assistance; who takes the responsibility for his own patients; who determines his consultations and chooses his consultants according to the individual conditions; who remembers that the practice of medicine is an affair between two human beings in which the human element is all important and cannot be avoided; that the practice of medicine is a profession; that he who seeks to make it a business or a trade has mistaken his calling.

1208 Eutaw Place.

PANCREATITIS—ITS TREATMENT, AS RELATED TO GALL-BLADDER INFECTION*

REPORT OF CASES

By J. H. BREYER, M. D.
Pasadena

DISCUSSION by C. G. Toland, M. D., Los Angeles; Clarence E. Rees, M. D., San Diego; Charles A. Dukes, M. D., Oakland.

SURGICAL diseases of the pancreas are not frequent. Unless a surgeon has seen several cases of acute pancreatitis, or unless he continually keeps this condition in his mind, he will fail to make a correct diagnosis before opening the abdomen. However, diseases of the pancreas associated with biliary tract disease are not so rare as formerly supposed.

INCIDENCE

In 1907 Egdahl reported a series of 105 cases of acute pancreatitis, forty-four of which were associated with gall stones. In a series of chronic pancreatitis cases reported by Deaver in 1921, 91 per cent showed evidence of biliary infection. In 1921 Judd found pancreatitis present in 26 per cent of 1290 cases in which operations were performed for biliary tract disease. In 1923 A. O. Whipple reported 230 cases of unselected biliary tract disease. Forty of these showed definite pancreatic changes. This emphasizes that in all operations in the upper abdomen, and especially on the biliary tract, the pancreas should be thoroughly examined.

The object of this paper is more definitely to crystallize our ideas about pancreatic lesions associated with biliary tract disease that our patients may be given full benefit from every surgical procedure. The surgical treatment must be based on the essential pathology.

ANATOMY AND PHYSIOLOGY

Let us consider the anatomy and physiology of the pancreas only as far as it has a bearing on the pathologic changes which take place.

The common bile duct is completely surrounded by the head of the pancreas in three out of four cases. In the fourth case the head of the pancreas is deeply grooved to receive the common duct. The pancreatic ducts usually empty with the common duct into the duodenum at the ampulla of Vater. They may, however, empty separately or may empty into the common bile duct one-third inch above the duodenum. As surgeons we are interested primarily in the external secretion of the pancreas.

The lymphatic supply, which is interstitial in distribution, drains toward the head of the pancreas and the common bile duct, and anastomoses

with the lymphatics coming from the gall bladder. As shown by Graham and others, there is a close relationship between the lymphatics of the gall bladder, the liver, and the pancreas.

PATHOLOGY

Pancreatitis may be classified as acute or chronic with various in between stages.

Fitz, in his paper published in 1889, classified acute pancreatitis either as hemorrhagic, gangrenous, or suppurative. Acute pancreatitis is usually a necrotic process, often associated with hemorrhage when the necrotic process involves the blood vessels. The pancreas may be enlarged several times its normal size. It may be hard or edematous. It may be red or bluish black in spots or profuse, depending on the amount of hemorrhage present. The hemorrhagic type is often associated with fat necrosis and gall stones. The small yellowish white opaque areas of fat necrosis on the omentum and on the structures adjacent to the pancreas are quite unmistakable. In a large proportion of cases death occurs within the first four or five days. The gangrenous stage, characterized by discoloration and softening of necrotic tissue infiltrated with blood, represents a late stage of the same pathological process. Suppurative pancreatitis does not differ from similar lesions in other organs. Bacterial invasion may be caused by an extension from a suppurative inflammation of the bile ducts associated with gall stones, or it may follow a hemorrhagic necrosis of the pancreas. Fitz observed that fat necrosis is less frequently associated with suppurative inflammation than with hemorrhagic or gangrenous pancreatitis.

Chronic pancreatitis is chiefly characterized by an increase in the fibrous tissue of the pancreas. The surgeon is chiefly concerned with the interlobular type, which changes the character of the external secretion of the gland. At a late stage the contraction of the fibrous tissue causes the lobulations to become more distinct and to stand out as firm nodules. At a still later stage the entire gland feels like a hard nodular mass. This can be palpated at the time of operation. Not only may the fibrosis change the secretions of the pancreas, but due to the relation of the common bile duct, obstruction to the duct may result from the fibrosis and tumefaction of the head of the pancreas. Moynihan warns against making a diagnosis of chronic pancreatitis by palpating the gland alone, as variations in the normal are great. The possibility of the presence of carcinoma or syphilis must be excluded.

PATHOGENESIS

The cause of these pathologic changes in the pancreas is still a disputed question. The position of the gland, the rapid destructive changes, the masked symptoms, make accurate study most difficult.

Cases are on record where the infection has been traced to the appendix and to a duodenal ulcer. Evidence as to whether the infection or

* Read before the General Surgery Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

causal agent reaches the pancreas through the lymphatics or by way of bile retrojected into the ducts of the pancreas, is far from being conclusive.

Moynihan believes that the immediate cause of the necrosis in acute pancreatitis is the activation of the pancreatic secretion by some agent within the substance of the gland. In chronic pancreatitis he believes that infection by way of the lymphatics is the causative agent.

Archibald believes that altered bile retrojected into the ducts of the pancreas may activate the trypsinogen into active trypsin, thus leading to self-digestion of the pancreas. Such necrosis he believes may stop short at a lower level of destruction, resulting only in inflammatory reaction, the first stage of chronic fibrosis. He believes bacteria play only a secondary rôle and that gall stones and spasm of the sphincter of Oddi are mechanical factors.

The supporters of the lymphatic theory are equally emphatic in their beliefs. The frequent observation of a localized hepatitis about the gall-bladder bed, associated with cholecystitis and pancreatitis has given rise to the opinion that there is a close relationship between the gall bladder, liver, and pancreas. This view has been confirmed by the work of Graham. It is claimed that enlarged inflammatory lymph nodes about the base of the cystic duct and common duct may lead to a reversing of the lymphatic current and an infectious or noninfectious lymphangitis of the pancreas may result. Supporters of this theory believe that the chronic stage of pancreatitis is thus produced which may at any time activate the acute stage.

TREATMENT

Recovery from acute pancreatitis, except in the most severe types, may take place without operation. However, these cases are so rare that no case should be left unoperated.

Operative mortality for acute pancreatitis has decreased in direct ratio to the early diagnosis and prompt surgical treatment. The disease is most often mistaken for high intestinal obstruction or perforation of a peptic ulcer or of the gall bladder. Any one of these conditions requires prompt surgical intervention. Valuable time should not be wasted in making a differential diagnosis. The escape of pancreatic secretion and the extravasation of blood into the general peritoneal cavity is rapid. The abdomen is best opened through a paramedian incision above the umbilicus. When the abdomen is opened the escape of bloody fluid and the presence of areas of pancreatic fat necrosis make the diagnosis positive. However, hemorrhage may be extensive or very limited. It may be confined to the region of the pancreas or limited to its capsule. The pancreas may contain a small hemorrhagic area or the entire gland may be converted into a large red soft mass consisting of blood, fat necrosis, and parts of necrotic gland tissue. The bulging

mass may crowd the stomach forward or appear through the gastrohepatic omentum, the gastrosplenic omentum or the transverse mesocolon.

Upon opening the abdomen the bloody exudate should be aspirated as it is highly toxic. The general cavity should be well protected by gauze packs before proceeding to the exploration of the pancreas. The pancreas should be exposed by the most direct route, though the usual approach is through the gastrosplenic omentum. The thin fibrous capsule of the pancreas may be slit with a curved forceps, care being taken not to plow into the gland, the purpose being to relieve the intraglandular tension. Vent must be given to any pent-up exudate, even if it is posterior to the pancreas. No effort should be made to loosen attached sloughs as hemorrhage may result. Abundant Penrose drains are then led down to contact with the pancreas. As infection of the biliary tract, with or without stones, so frequently co-exists with acute pancreatitis, a careful examination of the gall bladder and ducts should precede the operation on the pancreas. If the gall bladder shows evidence of infection or stones, it should be drained whenever possible. If stones are in the common duct they should be removed and the duct drained. Drainage of the bile tract aids the escape of bile and prevents any increase of pressure within the ducts. Operative procedures undertaken in acute pancreatitis are emergency procedures and the least possible should be done. If the effusion into the general cavity is great, a suprapubic drain into the pelvis should be placed.

The postoperative treatment does not differ from that of any other acute abdominal condition. If the effusion has been extensive, the patient should be placed on a peritonitis routine with administration of 3000 to 4000 cubic centimeters of fluids a day by hypodermoclysis and proctolysis. The blood sugar should be watched. As in other conditions of lowered vitality the use of insulin and glucose may be indicated. The drain tubes should not be removed too early. Time must be given to have firm adhesions wall off the drainage tract and thus protect the general cavity against the digestive action of the secretions. The skin and abdominal wall may be protected by vaselined gauze, zinc oxid paste, or kaolin. The postoperative course is apt to be stormy.

Chronic pancreatitis is usually overlooked and is first recognized during the course of an operation on the biliary tract. In every case of chronic cholecystitis, chronic pancreatitis should be suspected. The first factor in treatment is removal of the cause of infection. This is necessary to prevent tissue changes from occurring in the pancreas which in time may cripple its function. Prompt and thorough removal of the primary focus of infection may arrest the disease before its more advanced form has developed. Drainage of the gall bladder, therefore, in chronic pancreatitis, is not a logical procedure. It does not do away with the infected gall bladder. Experience has shown that the patient is temporarily

benefited by gall bladder drainage, but recurrence of symptoms often occurs. Cholecystectomy, with drainage of the common duct, is recommended. In draining the common duct, Deaver and Judd use the T tube. The removing of the T tube may result in traumatism, which may lead to stricture of the common duct. Moynihan recommends the use of two catheters for drainage of the common duct. A large one, No. 10-14, is introduced into the hepatic duct, while a smaller one, No. 4-6, is inserted through the common duct into the duodenum. However, drainage of the gall bladder is justified in selected cases. In cases when the gall bladder does not seem diseased, and when there are no enlarged lymph nodes in the vicinity and the cause is elsewhere, as in a peptic ulcer, cholecystotomy has proved of great value. Doctor Lobingier has suggested leaving the stump of the gall bladder as a means of drainage. This removes the major part of the diseased gall bladder and avoids the hazard of any future stricture of the common duct. Drainage of the gall bladder or of the common duct, whichever is employed, must be continued over a long period of time.

A subacute stage of acute pancreatitis may result if the initial attack is less severe and if the resistance of the patient is sufficient to overcome the initial infection and shock. The whole attack is less severe. Where abscess and gangrene of the pancreas take place, early operation is indicated, as in the acute form. Usually, however, these are the cases seen late. The operative approach is the same as in acute pancreatitis. Drainage of the abscess must be made by the most direct route. Deaver has had occasion to drain these cases through the left lumbar route. When the lumbar drainage route is chosen, care must be used to avoid opening the peritoneum. It is best not to wipe out the abscess cavity with gauze as a severe hemorrhage may result. Abundant drainage is sufficient.

A pseudopancreatic cyst may be the result of acute hemorrhagic pancreatitis. It may be limited to the substance of the gland, or may be confined to the lesser peritoneal cavity. Prolonged drainage is indicated.

Following extensive destruction of the pancreas, diabetes mellitus may result. The only hope for such a patient is insulin. In diabetes, associated with gall-bladder disease, the source of infection should be removed. Marked improvement, and even cure, has been reported, especially in patients over forty years of age.

PANCREATITIS DEVELOPING AFTER OPERATIONS ON THE BILIARY TRACT

Some of the heretofore unexplained complications following operations on the biliary tract are now found due to acute pancreatitis. A so-called cardiac collapse occurring in the first twenty-four hours after operation may be due to pancreatitis. It may also occur later in the postoperative course. We should always bear this in mind in order to

give our patients the benefit of proper drainage in such an event.

PANCREATIC ASTHENIA

Pancreatic asthenia is a symptom complex which may develop after any operation on the biliary tract, and especially when the pancreas and common duct are involved. A. O. Whipple, in 1923, was first to give an excellent description of this disease. The patient becomes listless, apathetic, develops nausea and vomiting, has a loathing for all food, complains of extreme exhaustion and weariness, and becomes highly apprehensive. There is a marked drop in blood pressure and a rapid loss in weight. These patients do not become comatose or delirious. All effort is avoided. All treatments are dreaded and exhausting. This group of symptoms usually comes on after the shock of operation has passed off and the patient is apparently doing well. It usually occurs between the second and ninth day postoperative, and may last two to thirty days if the patient survives.

Treatment should be directed chiefly to restore the body fluid loss. The continual vomiting and refusal to take fluids leads to low urinary output and nitrogen retention. Blood transfusions are indicated. Infusions of glucose, 5 to 10 per cent, with insulin have given excellent results. Digitalis has been given by rectum to improve the vasomotor and intestinal tone. Recovery, when such takes place, is said to be very rapid.

REPORT OF CASES

The following reports will illustrate the different types of pancreatitis I have encountered.

CASE 1.—Dr. C., age fifty-eight, was taken with severe pain in epigastric region about 3 a. m. The pain was most acute. The vomitus did not contain blood. The pulse was elevated to 112. He perspired freely, his respiration was 24. Later the pain was extended somewhat to right side of abdomen. The muscles of the abdomen were on guard, especially in the epigastric region. His past digestive history made us suspicious of gastric or duodenal ulcer. The history, the onset, and physical findings pointed to an acute condition within the abdomen, probably a perforated ulcer. Exploration was done within six hours from onset. This revealed the stomach and duodenum normal. There were adhesions about a distended gall bladder, but no perforation. The pancreas was enlarged; bloody fluid and flocculent lymph was in the lesser sac. There was no free fluid in general cavity and no fat necrosis. The fibrous capsule of pancreas was slit with a curved Kocher forceps. Several Penrose drains were led to the pancreas through an opening in the gastrocolic omentum. The gall bladder was drained and several stones removed. No stones were felt in common duct. The patient made an uneventful recovery though the convalescence was somewhat stormy. There is no doubt but that early operation stopped the acute pancreatitis in an early stage.

CASE 2.—Mrs. W., age sixty-one, presented a cystic mass above umbilicus. Patient had had digestive disturbances, pain, nausea and vomiting for about four weeks. There was a history of attacks of gall-stone colic dating back three years. Exploration revealed the pancreas enlarged two to four times normal size. An abscess pointed between stomach, duodenum, and transverse colon. The lesser sac was obliterated by

adhesions. The gall bladder contained many stones. There were many adhesions about the above area. The abscess was drained. The stones were removed from the gall bladder and cholecystotomy done. The patient had a very stormy postoperative convalescence with severe abdominal pains and digestion of wound due to pancreatic secretions. Her ultimate recovery was satisfactory except for a postoperative ventral hernia.

CASE 3.—Mrs. R., age fifty-three, a Mexican woman, was operated upon for acute cholecystitis and stone in common duct, with jaundice. Operation revealed a distended gall bladder, with thickened walls and filled with stones and pus. A marked perihepatitis about the gall bladder was present, with the liver edges rounded by swelling. The pancreas was enlarged, the lobules being prominent. The gall bladder was drained and the stones removed. The common-duct stone was removed and a No. 14 catheter anchored in the common duct, the tip placed in the direction of the hepatic duct. The postoperative course was satisfactory until the second week, when she developed the typical syndrome of pancreatic asthenia. She improved whenever the body fluids were restored, but would relapse as soon as they were stopped. This condition lasted for more than three weeks, when she died. No autopsy was permitted.

SUMMARY

In all operations in the upper abdomen the pancreas should be examined.

Operation for acute pancreatitis is done to help a patient over a serious emergency. No curative measures should be undertaken. The gall bladder should be drained. Not much time should be spent in removing stones.

In chronic pancreatitis cases the object should be to remove the focus of infection.

Postoperative complication of acute pancreatitis should be borne in mind in all operations on the biliary tract.

Pancreatic asthenia requires supportive treatment, restoration of body fluids, and the use of glucose and insulin.

701 Professional Building.

DISCUSSION

C. G. TOLAND, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Breyer has discussed the subject of acute pancreatitis from the standpoint of incidence, anatomy, physiology, pathogenesis, and treatment. I shall discuss the cause and the symptoms of acute pancreatitis.

The most serious of the acute abdominal diseases with which we, as physicians, have to deal is acute pancreatitis. The symptoms are acute, the diagnosis at times obscure, the treatment is radical, and the results are not entirely satisfactory. No one has been able definitely to prove the exact cause of acute pancreatitis and as a result there has appeared a large mass of experimental work and speculation on the subject. A number of men have produced acute hemorrhagic pancreatitis by injecting various substances, such as bile or duodenal contents into the pancreatic ducts, while others have worked out a lymphatic connection between the pancreas and appendix and gall bladder. They have shown that infection could extend from an acute process superimposed upon a chronic inflammation in either of these organs, through the retroperitoneal spaces to the pancreas.

Acute pancreatitis can be divided into three types: acute interstitial pancreatitis, acute suppurative pan-

creatitis or the pancreatic abscess, and the hemorrhagic type or pancreatic necrosis.

Acute pancreatic necrosis is generally considered to be a distinct disease and is rarely infectious in origin. The common cause is a retrojection of abnormal bile, that is, bile rich in salts, into the duct of Wirsung or to a retrojection of duodenal contents into the duct of Santorini. Either of these agents in the pancreatic ducts activates the proteolytic ferment, trypsin, resulting in digestion and necrosis of the parenchymatous cells, erosion of blood vessels, and hemorrhage.

Symptoms of Acute Pancreatitis.—Characterized by sudden severe pain in epigastrium radiating to the back, the left flank, to the lower chest, the left shoulder and over the entire abdomen, accompanied by abdominal distention, vomiting, and physical collapse. The extremities are blue, cold and clammy, and the patient is very restless.

Within twenty-four to forty-eight hours, if patient is alive, marked diarrhea begins. Tenderness is usually localized in the upper abdomen with marked resistance. At times a sausage-shaped mass may be felt in this same region. The temperature ranges from subnormal to 101, 102, or 103, and the white blood count is increased.

We must always keep in mind any previous history of gall stones, infected gall bladder, duodenal or gastric ulcer, appendicitis, or injury. The pain of an acute pancreatitis is not relieved by morphin so readily as in gall-stone colic. We must further differentiate incarcerated epigastric hernia; acute gastric dilatation; mineral poisoning; angina pectoris; spasm of the mesenteric arteries; mesenteric thrombosis; aneurysm of the abdominal aorta with slow leakage; intestinal obstruction; perirenal abscess of the left side; hematogenous infection of the left kidney; perforation of the undescended retrocolic appendix; ruptured ectopic pregnancy; and Pott's disease.

We will not discuss the matter of treatment except to emphasize Doctor Breyer's opinion that in acute pancreatitis immediate operation is necessary to save life.

CLARENCE E. REES, M. D. (2001 Fourth Street, San Diego).—Acute pancreatitis when encountered by the surgeon usually presents the symptoms of a violent peritonitis. The patient is too ill to give a satisfactory history and the abdomen too rigid and tender for examination and localization of the primary focus. These patients are operated upon for acute surgical abdomen with a usual diagnosis of ruptured viscus; the pancreatic origin usually constitutes a surgical surprise. The hemorrhagic peritonitis, with the milk-white areas of fatty necrosis, should lead one directly to the diseased pancreas the treatment of which has been well outlined. Any prolonged procedure on bile tracts other than cholecystostomy should be avoided as these patients are poor risks. Sufficient drainage of the abdomen and postoperative support have been stressed.

In other abdominal operations the pancreas should be handled with the utmost care, as a postoperative acute pancreatitis is a fatal complication. Such a complication is particularly likely to occur in operations on the common bile duct, where a stone is encysted at the ampulla of Vater. Attempts to elevate the stone from the ampulla by stripping and manipulating the duct in the region of the pancreas, if made at all, should be made with the utmost care as this is probably the most frequent cause of surgical pancreatitis. Also in transduodenal removal of calculi from the common duct the ampulla should be definitely isolated and enlarged only enough to permit removal of the stone. Incision of the common duct through the duodenum in the region of the stone rather than through the ampulla is a much easier procedure but is attended by a much higher mortality because it permits a retroperitoneal leak of pancreatic secretion.

When the abdominal drainage is irritating and contains pancreatic ferments the skin in the region of

the wound can be well protected with a dried milk dressing.* Dried milk is sprinkled thickly on the skin around the drainage tubes, a layer of gauze placed over this and milk again sprinkled over the gauze; the usual dressings are then applied. Dried milk, with its high concentration of fat, protein, and carbohydrate, has the advantage of neutralizing all of the ferments of the pancreas and thus aids in protecting the skin.

✻

CHARLES A. DUKES, M. D. (426 Seventeenth Street, Oakland).—Pancreatitis is a disease which has been frequently overlooked not only by the surgeon but by the diagnostician, especially the type of cases which have been reviewed under the head of subacute pancreatitis and those which follow operation on the biliary tract.

In the treatment of an acute condition of the abdomen where the diagnosis or operation seems somewhat hazy, where the appendix is not sufficient to account for the acute condition and the gall bladder is not sufficiently involved to lead one to suspect this as a cause of the condition, the surgeon certainly is negligent who does not expose the pancreas and definitely determine its condition.

It has seemed to me at times that, in the severe conditions which accompany acute pancreatitis, we are prone to use a type of anesthetic that does not give complete relaxation and the best opportunity for exploration of the abdomen. In these acute conditions there is a natural tendency to hurry the investigation.

I am very much impressed with the necessity for thorough drainage in these cases. I think this has been excellently shown in a paper by Olds, read before this section last year. There is no doubt in my mind that proper drainage of these cases will further reduce the mortality rate.

✻

DOCTOR BREYER (Closing).—Because of lack of time it was not possible for me to take up the symptomatology of pancreatitis. I am very glad that the discussers have emphasized the difficulty of making an accurate diagnosis. We shall be glad to try on our next case the dried milk as a dressing for intestinal fistula suggested by Dr. Clarence E. Rees.

POSTOPERATIVE MASSIVE ATELECTASIS†

A DISCUSSION OF ITS ETIOLOGY, PREVENTION AND TREATMENT, WITH REPORT OF CASES

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AND

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DISCUSSION by Frederick Leet Reichert, M. D., San Francisco.

ALTHOUGH the clinical aspects of postoperative massive collapse have become thoroughly familiar to surgeons through the recent reports of Scrimger,¹ Scott,^{2,3,4} Churchill,⁵ Jackson,⁶ Lee,⁷ Sante,⁸ et al., the etiology of this most interesting phenomenon remains sufficiently obscure to warrant the detailed presentation of individual experiences which provide important and possibly illuminating evidence as to the mechanism of its production.

PATHOLOGY

In his original definition of postoperative atelectasis William Pasteur emphasized "the

* Rees, Clarence E.: Dried Milk as a Dressing for Intestinal Fistula, *California and West. Medicine*, 30:419, 1929.

† Read before the Anesthesiology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

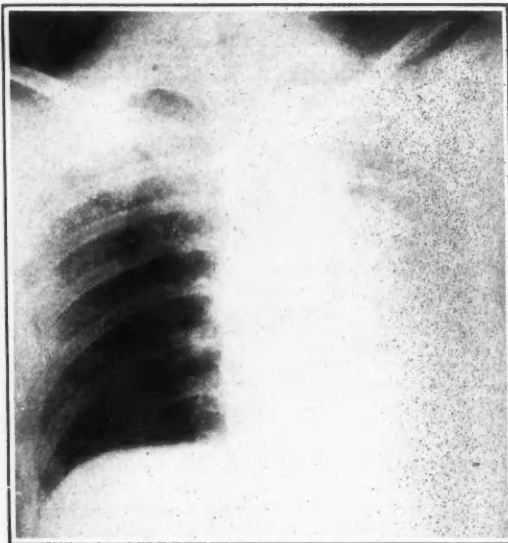


Fig. 1.—Massive atelectasis of the left lung with displacement of the mediastinum and heart to the left fourteen hours after appendectomy. Case 2.

failure of inspiratory power" as being responsible for the sudden deflation of large areas of lung tissue, a deflation which he thought occurred in the absence of any signs of obstruction of the airways. The failure in inspiratory power he attributed to the loss of the mobility of the diaphragm, either by direct paralysis or by reflex inhibition from acute inflammation. Briscoe attributes the deflation of the lung partly to the normal consequence of diminished breathing incident to a prolonged supine posture, incident to a severe illness, and partly to the alterations in the action of the diaphragm and of the muscles accessory to the diaphragm produced by inflammation of the muscles or of the pleural membrane covering them.

Most modern authors consider that bronchial obstruction associated with a weakened or diminished respiratory force plays the important part in the development of atelectasis. The site of this bronchial obstruction was thought by Elliott and Dingley⁹ and later by Scott,² to be located in the bronchioles and peripheral respiratory passages, whereas Lee and Jackson⁶ consider plugs of thick, tenacious mucus in the larger bronchi, observable and removable by bronchoscope, to be responsible for the obstruction.

To explain the hypothetical obstruction in the bronchioles, Scott suggests that the fundamental condition which initiates massive atelectasis is a nervous reflex, probably vasomotor, which causes a bilateral, partial obstruction in the peripheral respiratory passages, and that posture and tenacious sputum are secondary factors which make this obstruction complete on one side in advance of the other with a subsequent unilateral absorption of air to complete the picture of

massive collapse. In this he is sustained by Sante⁸ who suggests that some injury or insult in the region of the vagus distribution produces a reflex constricting action on the bronchioles, permitting their temporary collapse, with an accompanying absorption of the alveolar air beyond the collapsed bronchioles.

In recent reports there has been a gradual accumulation of concrete evidence in favor of the belief that central bronchial obstruction plays the important part in the production of massive atelectasis.

1. There is a striking similarity between this condition and the collapse accompanying the occlusion of primary bronchi by intrabronchial neoplasms.

2. The experiences of Lee and his associates demonstrate the feasibility of prompt refilling of an atelectatic lung by the bronchoscopic removal of mucous plugs from the large bronchi.

3. The condition can be accurately duplicated experimentally by the introduction of a plug of thick sputum into the main bronchus of a dog in whom the cough reflex has been abolished by sodium barbiturate administered intraperitoneally (Lee⁷). Air in the alveoli was gradually absorbed beyond the obstruction and massive collapse ensued. Similarly partial collapse of one lung has been produced in our laboratory by bronchial plugs of sea sponges.

Additional evidence that the plugging of the larger bronchi by thick sputum is responsible for the development of acute atelectasis was furnished by the two following clinical cases. One of them we believe to be unique in its manifestations.

REPORT OF CASES

CASE 1.—A man of forty-five with poor, carious teeth, badly infected gums and a purulent pharyngeal discharge was operated on for carcinoma of the pylorus, and a Polya resection performed under gas

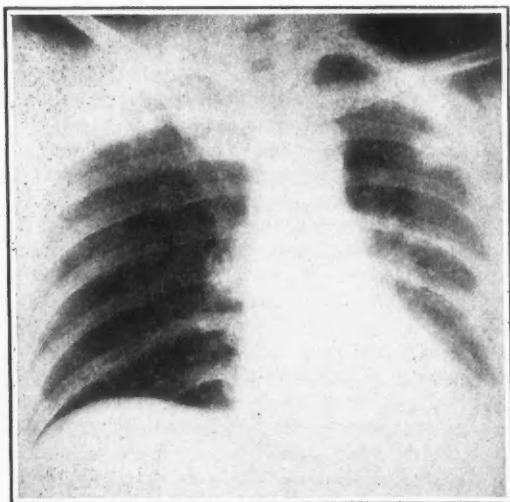


Fig. 2.—Roentgenogram demonstrating immediate improvement after turning patient on right side followed by prompt expectoration of a thick mass of sputum. Case 2.

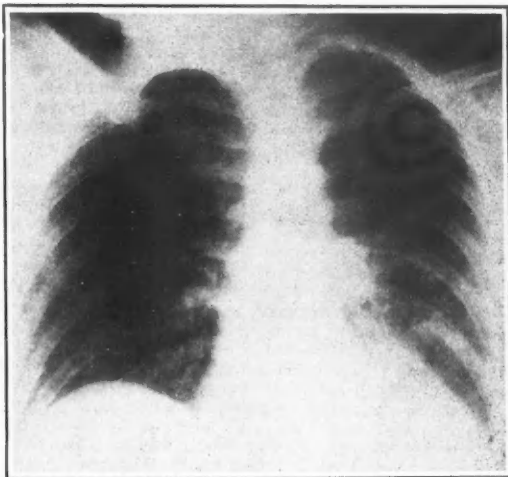


Fig. 3.—Roentgenogram demonstrating a fairly normal appearance of lung immediately following the expectoration of a mass of sputum which had produced a recurring atelectasis. Picture taken twenty-four hours after Fig. 2.

and ether anesthesia. Fourteen hours after his return to the ward the nurse noted on the bedside chart "The patient seems to have considerable mucus in throat and is unable to cough it up."

Twelve hours after this note was made it was observed that the pulse rate was 132, respirations 32, temperature 102 degrees Fahrenheit. Examination revealed marked diminution of respiratory movements on the right with retraction of the chest wall and complete displacement of the heart to the right side. An immediate x-ray examination (Fig. 1) showed the typical appearance of a massive collapse. The next morning we returned to find a greatly changed patient with a temperature of 100 degrees Fahrenheit, pulse 102, and respirations 24, and with complete disappearance of the respiratory distress and physical signs previously observed. An immediate roentgenogram showed practically complete disappearance of the atelectasis. The patient informed us that during the night he had spat up about a half cupful of thick yellowish sputum and that this was followed by prompt relief of all subjective distress and dyspnea. An uneventful recovery followed.

CASE 2.—A young sophomore at college, eighteen years old, was operated upon for acute gangrenous appendicitis and localized abscess, following symptoms of three days' duration. The appendix was removed through a McBurney incision under gas anesthesia and the wound drained. Accompanying the abdominal symptoms there had developed a cough with some purulent sputum. The lungs were clear.

Fourteen hours after the operation the patient was quite ill, coughing and raising small amounts of thick, yellowish sputum. The abdomen was markedly improved as compared to its condition the day before. The chest, however, showed a striking picture: The left side was retracted and moved almost not at all on respiration. The heart was displaced markedly to the left, the right border being demonstrable to the left of the sternum. In its upper half, the left chest was flat to percussion, and no breath sounds were audible, only a few moist râles. An immediate roentgenogram revealed a typical massive collapse. (Fig. 1.) Under the fluoroscope the patient was then rolled over on his good side (Sante⁸) and an immediate improvement in the aeration of the left lung was observed under the fluoroscope with a marked change

in the physical signs. (Fig. 2.) The patient, who was an intelligent college student, volunteered the information that with the change in position he noted subjectively a feeling as though a whistling had occurred in his left chest, and that this whistling seemed to start in the region of the sternum and to travel toward the left clavicle. A few minutes after the improvement was noted the patient coughed up a half ounce of thick purulent material.

Twenty-four hours later the patient was again observed and again the typical appearance of a massive collapse was present with physical signs identical with those present before the expectoration of mucus on the previous morning. On this occasion loud rhonchi could be heard over the entire left chest. In order to examine the patient posteriorly more carefully he was asked to roll slightly to the right side. To our astonishment and chagrin, the patient began to cough and to spit up a large amount of greenish yellow mucus, some of it quite firm, being almost a cast of the bronchus. Again, as before, the patient noted the whistling within his chest proceeding from the sternum to the clavicle. There was an immediate change in the physical signs and appearance of the patient, and there remained no physical nor radiologic evidence of the massive collapse. (Fig. 3.)

Improvement continued satisfactorily until three days later, when the patient again presented the physical signs of a massive collapse with rapid and difficult breathing. It was accompanied by bubbling respirations, and loud noises were heard throughout his left chest. A fluoroscopic examination was requested, but in transferring the patient to the fluoroscopic table he was rolled onto the unaffected or right side with prompt relief from his difficult and rapid breathing. For the third time the whistling sensation running from the sternum to the clavicle was experienced by the patient followed by the expectoration of considerable sputum. There can be little doubt as to the interpretation of this phenomenon. With the displacement of a large plug of mucus from the main bronchi, the collapsed channels and alveoli of the atelectatic lung were suddenly filled with a rush of air through the bronchi, and one cannot escape the conclusion that the bronchial obstruction of a massive collapse lies not in the peripheral respiratory passages but in the central or hilar bronchi. The observation indicates also that there is considerable negative pressure within the collapsed lung which acts as a constant suction in holding the thick bronchial secretion in place once the collapse has occurred, increasing the difficulty of the removal of this secretion by the ordinary act of coughing.

SEQUENCE OF EVENTS IN ACUTE ATELECTASIS

Our conception of the sequence of events leading to the completed picture of acute atelectasis is as follows:

1. Accumulation of a mucopurulent tenacious exudate in the hilar bronchi of one side. The amount and character of this bronchial exudate is undoubtedly influenced by the presence or absence of a respiratory infection before operation and by the reaction of the bronchial mucosa to the type of anesthesia administered. The factors determining the side upon which such accumulation occurs are: (a) Posture on the operating table, Scott⁸ and Jackson⁹ have suggested that the dependent side is the one on which the collapse develops. (b) Compression of part of the thorax by lying on one side or by resting on a sandbag or elevations such as are employed in operations on the kidney. Such compressions result in incomplete aëration of the compressed lobe or lung

on one side, permitting the accumulation of mucus in the bronchi. (c) A prolonged recumbency in one position after operation, any movement being resisted by the patient because of pain.

The prompt appearance of acute collapse within the first twenty-four hours after operation in more than half of the reported cases suggests that this mucus began to collect during the period of anesthesia and that its accumulation in the larger bronchi was determined and assisted both by posture and by the incomplete aëration of part of the lung and by the absence of coughing during the anesthesia.

2. After operation the voluntary arrest of movement of all the respiratory muscles because of the pain associated with deeper respirations favors the further accumulation of mucus in the bronchi, the site of this accumulation being determined again by posture and by the previous compression of the chest.

3. Through fear of pain the patient is unwilling to contract the traumatized abdominal muscles and to make the forced expiratory effort in the act of coughing necessary to dislodge the accumulating mucus. This, of course, is more pronounced in the sensitive and nervous patient whom Scott thought particularly susceptible to his vasomotor reflex responsible for the initiation of the collapse, but anyone who has experienced an abdominal operation will realize the reality of the pain accompanying breathing and coughing in the first few days following a laparotomy.

4. The complete blocking of the main bronchus or bronchi to one lobe or to lobes causes the absorption of air in the lung beyond the obstruction with shrinking of the affected lung and distention of the other lung. Displacement of the mediastinum and heart is the result of these last two factors. The completeness or incompleteness of the blocking of the bronchus explains the diverse physical signs encountered, particularly with reference to the loud râles and rhonchi occasionally heard. An incompletely plugged primary bronchus accompanied by complete blocking of the main bronchus to one of the lobes only will permit air to bubble back and forth into the expanding lobe, whereas almost complete silence will be present over the area of the lobe to which the completely plugged bronchus leads. In many instances the signs accompanying the atelectasis are much more pronounced over one or the other lobe of the affected side and, as pointed out by Lee⁷ and Churchill,⁵ the phenomenon of atelectasis may affect the lung in varying degrees, involving in different cases parts of a lobe, one lobe or the whole lung on one side. The partial involvement of a lobe is no doubt frequently overlooked due to the meagerness of the physical signs accompanying the atelectasis.

Although there is a tendency to minimize the serious effects of this postoperative complication, recent work¹⁰ suggests strongly that the more serious complication of pneumonia may have its

origin in areas of atelectasis. Our every effort should, therefore, be directed toward its prevention.

MEASURES TO PREVENT ATELECTASIS

Bearing in mind the probable sequence of events leading to its occurrence, let us consider the measures, in the order of their application, which may aid in avoiding the development of atelectasis.

1. The formation of thick, tenacious mucus, which is so frequently observed as the probable cause of a massive collapse, may be favored by a too large dose of atropin before operation.

When a patient gives preoperative evidence of a purulent bronchitis it may be better to avoid giving any atropin at all. A more abundant but thin bronchial secretion is preferable to a thick, tenacious secretion.

2. Large preoperative doses of morphia should be avoided lest the morphia aid in producing shallow breathing and complete abolition of the coughing reflex for a prolonged period after anesthesia has ceased. When preoperative evidence exists as to the presence of a bronchial secretion, due to a chronic respiratory infection, it would be preferable to administer none or only small preanesthetic doses of morphia. It is evident that the anesthetist should be familiar with the exact condition of the patient before giving the preanesthetic order of atropin and morphia. Similarly too frequent and too large doses of morphia should be avoided after operation for the same reasons. It is our practice to use rectal instillations of large doses, forty to eighty grains, of sodium bromid, in tap water, supplemented by small doses of morphia to control postoperative pain.

3. All areas in the lung which may have remained "silent" or subject to minimum aëration during the operation, due to posture and compression, should be well expanded through hyperventilation induced by carbon dioxid saturation, by rebreathing or by breathing a mixture of carbon dioxid and oxygen at the end of the operation, as advocated by Scott and Cutler.⁴ Incipient plugging of a bronchus may well be cleared by this procedure. Scott advocates "the use of gas from a tank of 30 per cent carbon dioxid and 70 per cent oxygen which is delivered undiluted to the mask, the anesthetist varying the amount of carbon dioxid given by allowing the admixture of air around the mask, and by the interval the latter is held in position. The whole purpose of the procedure is to hyperventilate fairly vigorously but not sufficiently to tire the patient or to raise the blood pressure excessively. After the patient begins to breathe deeply and at a slightly increased rate, the mask is removed or lifted and the hyperventilation diminishes. Usually several such waves of increased depth of respiration are produced in this manner over a period of from five to ten minutes. For a moderately long ether anesthesia this does not suffice to deëtherize the

patient completely to the point of consciousness, though it usually improves the color and the pulse volume. The purpose of this routine hyperventilation is not primarily that of deëtherization, but the prophylaxis of massive atelectasis. The precaution is always taken that hyperventilation is not carried to the extent of tiring the patient. Infants, persons with pulmonary disease, and cachectic patients are the only ones not given hyperventilation."

4. Upon the return of the patient to his room the following regimen is undertaken:

(a) Semi-Fowler's position is usually practiced, particularly when the patient is lying on his back.

(b) The position of the patient is changed at hourly intervals by rolling slightly to either side, maintaining the position by pillows under the back.

(c) The patient is instructed to cough up any mucus which may be heard collecting in the bronchi, and is assisted in this act of coughing by pressure over the abdominal dressing, giving added support to the abdominal muscles.

(d) The patient is encouraged to breathe deeply at intervals, regular breathing exercises being instituted by the nurse and by the doctor when the patient is conscious.

(e) After the first twenty-four hours the patient is rolled completely over on either side several times daily in order to assist in dislodging collecting mucus as suggested by Sante.

These measures may be utilized to prevent the appearance of acute atelectasis and undoubtedly serve also in the prevention of so-called hypostatic pneumonia, which may have its origin in atelectatic areas. Once the condition of atelectasis has arisen, the patient is treated by rolling him to the good side, as advocated by Sante. When thick, tenacious sputum is present, potassium iodid or ammonium chlorid may be administered to thin and loosen it.

Bronchoscopy, as advocated by Lee and Jackson, has not been utilized by us in the few instances seen. It is a serious procedure in a patient just recovering from the effects of a major operation twenty-four hours previously, and the efficacy of the method of Sante was so well demonstrated in the second case reported by us that it is the first procedure to be undertaken. In experienced hands bronchoscopy may be employed if Sante's procedure fails to dislodge the obstruction, but it cannot be recommended as a general therapeutic procedure.

SUMMARY

Evidence that acute atelectasis is due to a central bronchial obstruction is furnished by the experience with an example of this postoperative complication on the left side in which a subjective feeling of "whistling" occurred, proceeding from under the sternum and traveling toward the left clavicle, coincident with the coughing up of a

large amount of thick sputum and followed by the complete disappearance of all signs and symptoms.

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DISCUSSION

FREDERICK LEET REICHERT, M. D. (Stanford Hospital, San Francisco).—The two excellent case illustrations in Doctor Mathes' and Doctor Holman's paper offer a beautiful demonstration of the importance of careful and scientific observation in determining the etiology of postoperative massive collapse. Such detailed record of cases facilitates accurate deductions and leads to clarification of the subject.

During the past four years with the further knowledge of the etiology of pulmonary atelectasis, the anesthetist has nearly forgotten his great fear, that of "anesthetic pneumonia." Through his efforts during and at the end of the operation as well as by the improved postoperative care of the patient, this distressing complication is disappearing. Formerly this so-called anesthetic pneumonia was in many cases either massive atelectasis or its offspring, hypostatic pneumonia.

The anesthetist plays an important rôle in its prevention as the authors have indicated. He should warn the operator of its possible development in the individual case from his observations of the duration of the anesthesia, or the presence of mucus, or the position of the patient on the operating table. Often after light anesthesia and before the operative pains are felt by the patient, the anesthetist can prevail upon the patient to expectorate and to cough up a potential mucous plug.

This condition may develop following operative procedures elsewhere than in the abdomen, as the following case will illustrate. After two left craniotomies on a child of seven years under ether anesthesia for the two-stage removal of a brain tumor, a right-sided pulmonary atelectasis developed, and each time, by turning the child onto the left side, tenacious bronchial plugs were coughed out. The long operation

with the patient lying on the right side, plus considerable mucus from ether irritation and the prolonged right-sided position in bed to prevent pressure on the operative wound, were all inductive to the development of this complication. The expediency of just rolling the child onto the good side removed the plug with prompt improvement of pulse, respiration and temperature.

CERTAIN OPERATIVE PROCEDURES EMPLOYED IN OPHTHALMOLOGY*

REPORT OF CASES

By JOSEPH L. MCCOOL, M. D.
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WHEN the invitation to present a paper before this section was extended to me my first impulse was to acknowledge my appreciation of the honor and then decline. After discussing the matter it seemed permissible to depart somewhat from the stereotyped procedure of presenting a formal paper on some one particular subject, and instead to give my own personal experiences in dealing with the different surgical conditions which one meets in the daily practice of ophthalmology.

CATARACT OPERATIONS

Because of its importance and the position which it occupies in the list of diseases amenable to operation, cataract operation will be discussed first. Let me say at once that I do not practice the intracapsular operation except in certain selected cases, and then only in such manner as to safeguard the integrity of the eye to the utmost.

Inasmuch as all of us are interested in knowing how other surgeons operate, and how best to improve our own technique, it seemed to me that by describing my own methods of operating I might be able to help someone and that the general informal discussion which I hope will follow will bring out much that will be mutually beneficial. We are, or should be, eclectic in developing our technique.

Preparation.—In preparing the patient for operation I try to break into the routine of his life as little as possible; at the same time I speak of the operation as though it were of no particular moment. Of course the family have been told that it is a procedure requiring more than ordinary skill, judgment, and experience, and even under the very best of conditions may be unsuccessful. I always operate in the late afternoon unless there are specific reasons to do otherwise. There are several good reasons why this has proven satisfactory for me and my patients. The first six hours after the operation are the most important, and the patient during this time should be kept as quiet and free from annoyance as possible. Not infrequently the patient falls asleep after being placed in bed and does not awake for six or seven hours. Then, too, the necessary noises and disturbances incident upon hospital activity are beginning to abate by 4 o'clock in the

* Read before the Ophthalmological Section of the Utah State Medical Association, June 30, 1928.

afternoon. Furthermore, I am disinclined to operate in the morning because most of the operations on the ear, nose, and throat are performed at that time, and the commotion and smell of ether is distinctly bad for the morale of a cataract patient. From a purely selfish standpoint it suits my own convenience better to operate in the afternoon, as I use the morning hours from 8:30 o'clock on for my office practice.

The patient is sent to the hospital the morning of the operation. After a preliminary washing with tincture of green soap, the eyebrows and eyelashes of the eye to be operated upon are shaved and clipped. The skin in the immediate vicinity is painted with a solution of hexylresorcinol 1 to 3000, and a sterile pad placed over the eye. Two hours before the time set for the operation the patient is given two allonal tablets, and one drop of 2 per cent homatropin is instilled into the eye. These are repeated one hour before the operation. After the patient is on the table, and while the eye is being cocaineized, hexylresorcinol 1 to 3000 is again applied to the skin around the eye. The conjunctival sac is flushed with the same solution.

The fibers of the seventh nerve supplying the orbicularis are then blocked by infiltration anesthesia, using 6 cc. of 2 per cent novocain and adrenalin (Metz). I use a 40 mm. platino-iridium needle, which is sterilized in an alcohol flame. This procedure is routine for every operation in which the eyeball is opened. Within five minutes the orbicularis fibers begin to smooth out and the patient experiences difficulty in closing the lids. By the time I am ready to make my incision forcible closing of the lids is impossible. As a matter of fact, while the nurse is arranging the instruments, frequently I find it necessary to close the upper lid and place a pledget of moist cotton over it to prevent desiccation of the cornea. I have often wondered why this very important and simple procedure is not universally used. That it is not, I know from conversation with other ophthalmic surgeons. I cannot too strongly urge upon all who do not practice it to do so. It is a very simple procedure, practically painless, and gives a sense of security that is of incalculable value.

While it is not my routine practice, in those eyes that are at all congested and in which I have reason to feel that cocaine will not suffice to effect a good anesthesia, and also in extremely nervous individuals, I use a deep orbital injection of 2 cc. of 2 per cent novocain. In giving this, the 40 mm. needle is used, previously sterilized in the flame and inserted through the skin of the lower lid, just above the bony rim of the orbit 1 cm. down and in from the external canthal ligament. The needle follows the external orbital wall for about 30 mm., then turned medially between the external and inferior recti muscles, the plunger is withdrawn slightly so as to be sure the point has not entered a vein, and the contents are slowly injected. The infiltration anesthesia thus effected

catches the short ciliary nerves from the ciliary ganglion and the long naso-ciliary nerves.

I do not use a subconjunctival injection above the cornea as many men do, as it seems to me that what is gained in anesthetizing the iris for the iridectomy is lost in making an accurate conjunctival flap. I am willing to admit, however, that this objection may be rather more fancied than real.

The separation of the lids may be effected either with lid hooks or with a speculum. The Fisher lid hooks and those devised by Green are undoubtedly effective in giving good lid control. I must admit, however, that, with good akinesis, I am very partial to a small light speculum devised by Wilder. This speculum has a small, flat handle beneath the blades which permits of its being used to raise the lids if the occasion arises. This has an added advantage of giving the assistant a free hand to manipulate the flap and to hold extra instruments.

Corneal Section.—The incision for corneal section is an ample one embracing slightly less than one-half the cornea, and the conjunctival flap is made upon completing this. A single stitch of No. 1 twisted silk is placed in the flap and the loop is spread and laid aside until the lens is extracted.

Iridectomy.—In making the iridectomy the assistant grasps a portion of the loop and the free end of the suture lying over the cornea and gently raises the flap. The iris forceps that I use is not an iris forceps at all, but the small instrument which Elliot uses in grasping the button made by the trephine. I like this instrument because it is short and has the tooth on the under side, which, when the flap is raised, may be placed directly on the iris near the sphincter if a full iridectomy is to be made, and near the periphery if one elects to do a buttonhole iridectomy. If a complete iridectomy is made the blades of the iris scissors are placed so as to coincide with the vertical meridian of the cornea. This gives a smaller coloboma. In making a peripheral iridectomy the cut is easier to make, if the blades of the scissors lie parallel to the incision.

Some surgeons invariably use a complete iridectomy while others prefer a peripheral one. My own practice is to do a complete iridectomy on old people where the cosmetic result is of no particular moment. There is no doubt that the extraction is much easier to perform through a complete iridectomy than through either the intact iris or a peripheral iridectomy; and if reasonable care is exercised in replacing the pillars of the coloboma the cosmetic result is good, as the upper lid covers it to such an extent so as to make it almost invisible. On the other hand, in young individuals—those between forty and sixty—the cosmetic result is not to be considered lightly. In these cases I have been doing a preliminary peripheral iridectomy. This can be done in the office, and is no more difficult to do than a simple paracentesis. The pupil is contracted with several drops of eserine, one grain to the ounce. A small keratome incision about three or four millimeters long is made at the limbus; a very fine iris for-

ceps is inserted and a small piece of iris near the periphery is excised. The eye is bandaged and the patient rests in the office for several hours, and is then permitted to go home. Several days later the extraction is performed. Inasmuch as the pupil is fully dilated at the time of the major operation, this is greatly facilitated by having the iridectomy out of the way. I have done this on a number of patients, and so far have had no reason to regret it.

Delivery of the Lens.—There are numerous methods of extracting the lens, both intra- and extracapsular. You are, of course, familiar with all of them. I have tried many of them and have finally adopted the following technique as being, in my hands at least, the safest and most efficient. Two types of capsule forceps are used, depending upon the prominence of the eye. If the eye is small, shrunken, or the brow prominent, the new model Ewing forceps is selected. If the eye is large and fairly prominent, giving plenty of room for manipulation, the new Vail forceps are used. The assistant gently raises the conjunctivo-corneal flap and the forceps are inserted close to the lower border of the iris; when they reach this point the tips are depressed and passed behind the lower portion of the iris and at this point opened. A fairly large bite of capsule is taken in the grasp of the forceps and held while a large expression hook makes pressure below the lower limbus. If the capsule is more resistant than the zonule the lens will be delivered in its capsule. No more pressure need be applied than in the extracapsular operation. If, however, the capsular is less resistant than the zonule the former comes away, converting the operation into an extracapsular one with the difference that by taking a grasp of the capsule low down behind the lower margin of the iris a larger bite of capsule comes away with the forceps than with any other method with which I am familiar.

In the January issue of the *Archives of Ophthalmology* Colonel Henry Smith presented a paper concerning a new method of extraction in the capsule by which he tumbled all lenses, incipient, intumescent, mature and sclerosed, by making pressure five to six millimeters below the limbus, thereby forcing the vitreous forward between the ciliary body and the lower edge of the lens. Since reading that article I have, without changing the fixation of the lens with forceps, dropped the expression hook from the limbus to a point five or six millimeters below this and made pressure there. A very useful instrument for making this pressure is the one recently devised by Swartz of St. Louis, which I commend to you. If the lens tumbles, the cornea is tucked in behind the advancing lens and the upper zonule fibers are gently broken by raking the lens sideways with the concave edge of the hook after the lens lies outside of the eye. The stitch is then tied, the iris is replaced and the eye is closed. If the capsule ruptures after the stitch is tied lightly, the cortex is washed out with one-half normal salt

solution. It is evident, of course, that there is nothing original in this technique. I have taken what is best from that suggested by operators of vaster experience than mine. However, there is this to be said about it: at no time is more pressure used than is justifiable, and in more than half of my cases the lens is extracted in its capsule. In those in which the capsule ruptures, a large enough piece comes away so as to make a needling rarely necessary.

Concerning its applicability in complicated cataracts I should like to point out a few points in the technique which have proven useful in a few cases. It is, of course, understood that the eye is free from all signs of active inflammation. When possible I do a full complete preliminary iridectomy, waiting several weeks if necessary before extracting the lens. The usual incision and flap are made. The iris is then separated from its attachment to the lens by passing a spatula beneath one edge of the coloboma and sweeping it around the circumference of the pupil until the iris is freed from the lens. The breaking of these posterior synechiae usually causes considerable bleeding, and it is necessary to wash the blood out of the anterior chamber before applying the capsule forceps. By reason of the antecedent inflammation there is usually considerable fibrous tissue on the anterior capsule which is easily grasped by the forceps. The ease with which these lenses are dislocated and delivered in their capsule would suggest that changes have taken place which render the zonule fibers very friable.

It is particularly desirable to be able to extract the lens in its capsule in this type of case, for retained cortex and capsule will almost surely cause an iridocyclitis which is likely to nullify the result of the operation. On the other hand, the eye does surprisingly well if one is successful in effecting an intracapsular delivery.

Secondary Cataract.—In dealing with the capsule which remains after a capsulotomy operation, if it is thin and does not give the appearance of toughness, I use a Ziegler knife needle. If I have reason to believe that the capsule is tough and dense, I prefer to cut it with a small De Wecher scissors through a keratome incision. An annoying and at times a serious sequela of a cataract extraction is hypertension, with the usual accompaniment of diminution of central vision and contraction of the field. In the capsulotomy operation this is occasionally brought about by the incarceration of tags of capsule and vitreous in the wound. Not infrequently a partial prolapse of the iris, not enough to act as a subconjunctival drain, may be responsible for the hypertension. I have seen it occur following an intracapsular extraction where the iris has become adherent to the hyaloid at the pupillary margin, and in a few cases of hernia of the vitreous into the anterior chamber. By cutting the capsule and vitreous bands with a knife needle or, if the former ap-

pears too dense, with a De Wecher scissors, the hypertension may sometimes be relieved.

If the hypertension occurs following an intracapsular extraction, I have used a small Homer Smith capsulotomy needle to separate the margin of the pupil from the underlying hyaloid, cutting through the latter upon withdrawing the needle.

Finally it may be necessary to trephine below. Some surgeons have succeeded in reducing the tension by withdrawing one of the pillars of the coloboma beneath a previously dissected conjunctival flap as is done in the iridotomy operation. I have had no experience with this procedure, preferring to trephine below or even on either side.

GLAUCOMA WITH COMPLICATIONS

We are often confronted with the problem of what to do in simple glaucoma complicated by the development of cataract. I feel that I have no right to offer advice, for my experience has been too limited. At any rate I shall give you my views in the hope that there may be something helpful in them.

If, when the patient with simple glaucoma is first seen, incipient cataract be present and there is reason to believe that in the near future, in spite of the control of the glaucoma, sight will be impaired to such an extent so as to necessitate an extraction, two courses are open to us. One, we may elect to trephine above and later extract the lens below, or, two, we may perform a La Grange sclerectomy above and later extract the lens, as usual, above. I have practiced both of these procedures successfully and recommend them for your consideration.

The surgical procedures which have been advocated for the permanent reduction of the hypertension in glaucoma have been many and varied. As this paper is intended to be one of personal experience and preference, I shall refer only to the few that I have used.

It is the almost universal practice, in this country at least, to relieve an acute congestive glaucoma by making a broad, deep iridectomy. With the technique of this operation you are all familiar. Let me recommend that before operating, whether by local or general anesthesia, that a deep orbital injection of 2 per cent novocain and adrenalin be given. I was called upon to operate upon a woman with an intumescent cataract which had caused an acute congestive glaucoma, and inasmuch as it was inadvisable to give a general anesthetic, I gave her a deep orbital injection of novocain and adrenalin. Before I was ready to make my incision the tension had diminished appreciably, and the extraction of the cataract was uneventful and painless.

In simple chronic glaucoma, Elliot's sclerocorneal trephine operation, La Grange's sclerectomy and Borthen's iridotomy are the operations which most surgeons employ. For a time I was partial to iridotomy, and I have a number of cases in which it reduced the tension satisfactorily, but the unsightly pear-shaped pupil, and in several cases a rather large bleb which overlapped the

cornea, made me abandon it in favor of trephining. I believe also that in a given number of cases trephining will reduce the tension more effectively than iridotomy. This is particularly true in cases of long standing in which the base of the iris is firmly attached to the posterior surface of the cornea. I know of several patients whose eyes I might have saved had I chosen to do a trephining instead of an iridotomy.

I do not believe anyone can improve on Elliot's operation so far as technique is concerned, and my only departure from it is to make my incision in such a way so that the ends may be as far removed from the cornea as is consistent with an adequate exposure of the area to be trephined. This leaves a large area of undisturbed subconjunctival tissue to either side of the trephine opening, thereby greatly increasing the drainage facilities.

ENUCLEATION

I feel as though I should apologize for touching upon the subject of enucleation, and yet I feel sure that many surgeons still adhere to the practice of simple enucleation without implanting some substance into Tenon's capsule. I have been using the Frost-Lang operation since 1910 with very satisfactory results. Many substances have been advocated, but I have found that a hollow gold sphere about 16 millimeters in diameter is easy to procure, simple to insert and usually stays in place. I have yet to have one extruded. In several cases I tried an implant of fat. This lengthened the operating time considerably, and I do not believe that it is any better than a gold ball. In enucleating under local anesthesia, as one occasionally does, it certainly complicates the operation to be obliged to block off an area on the abdomen in order to remove the necessary fat and fascia. Enucleation under local anesthesia may be performed painlessly provided the patient is at all tractable. A preliminary injection of morphin and hyoscin places the patient in what Crile calls a neutral state. By nerve-blocking the lids to relax them, injecting around the insertion of the muscles and along their bellies, and by catching the long and short ciliary nerves with a deep orbital injection augmented by more of the anesthetic, injected back of the globe after the recti are severed, an almost, if not completely, painless enucleation may be performed. It has been estimated by Labat that one may inject with safety as much as 30 cc. of 2 per cent novocain in the average individual.

The point in technique which has served me satisfactorily and which I should like to pass on to you, is that I make no attempt to catch up the individual muscles, but instead cut them close to the globe, disturbing their attachment to Tenon's capsule as little as possible. After the eye is enucleated and bleeding has been stopped, a pledget of cotton is inserted in the capsule to absorb any oozing, while a purse-string suture is placed in the capsule. This is of No. 4 braided silk entered from the lower conjunctival surface and passed

over and over the free edge of Tenon's capsule, making its exit on the conjunctival surface alongside the point of entrance. After the pledget of cotton is removed, the gold ball is inserted, the suture drawn taut and the ends threaded through the holes of a small button and tied on the conjunctival surface. The conjunctiva is sutured horizontally with No. 1 black silk. The buried silk suture may be removed in ten days.

There is nothing original about this technique, but I can recommend it as very simple, effective, and capable of imparting considerable rotation to the prosthesis.

CONJUNCTIVOPLASTY

Finally, I should like to call your attention to the value of conjunctivoplasty, not only in injuries to the anterior ocular segment, but also in certain types of corneal ulcers. In incised and lacerated wounds of the cornea and sclerocorneal junction either with or without iris prolapse, if the injury is at all extensive an apron of conjunctiva may be fashioned and the wound covered. If there is iris prolapse this must be excised and the lips of the wounds cauterized either with phenol or trichloroacetic acid before it is covered with conjunctiva. Certainly many eyes have been saved by this procedure which might otherwise have been lost.

Not alone in injuries to the cornea, but in ulceration of this membrane as well has conjunctivoplasty proven its usefulness. In this connection let me quote from a paper in which I reported a case in which one eye was affected with marginal ring ulcers and in which conjunctivoplasty undoubtedly saved it.

REPORT OF CASE

The patient whose left eye serves as the basis of this report was a Scotch woman, fifty-eight years of age, married and the mother of two grown sons. She was thin, spare, enjoyed poor health and hoped for the worst. She was absolutely devoid of a sense of humor and was chronically underfed from choice. This element of undernourishment undoubtedly was a large factor in the development of the severe ulceration of her left cornea which very nearly destroyed this entire membrane.

In August 1924, the patient consulted me complaining of a scratchy feeling in the right eye. Examination of the eye revealed a localized area of pericorneal injection to the nasal side of the cornea. Just at the limbus there was a small round ulcer which stained with fluorescein. Ointments containing holocain and mercurophen, holocain and novoforn, were used, alternating with a 2 per cent solution of mercurochrome and a zinc and boric lotion. The ulceration finally healed although it took a month to do so.

One month later she had another attack in the same eye, and of the same character; this healed promptly with the same medication as used in the first attack. After the lapse of a year, during which time she was free from any ulcers, she returned with quite a large ulcer on the left cornea. One week previously she had had what she described as an acute sore throat. Since then both eyes had been uncomfortable, but the left one showed the ulceration.

The ulcer was about 4 millimeters long by 1 millimeter wide, concentric with the limbus, extending from nine to eleven o'clock. It was yellow-gray in color, and for a time showed no tendency either to spread or heal. Scrapings from it failed to show any distinctive organisms. Pericorneal injection was localized, and at this time there was no iritis, although this de-

veloped later. At first the ulcer was treated with holocain, mercurophen and zinc, which made no impression on it. Applications of 2 per cent mercurochrome and iodine were made to the base after curetting away the slough. Pasteurization after the method of Prince and the use of the thermophore, both seemed to irritate rather than allay the subjective symptoms, and certainly failed to check the ulcer's spread. Milk injections were also used.

At this time it became evident that what at first seemed to be but a mild form of ulceration, was indeed formidable and was spreading slowly but surely. Fortunately the extension was concentric with the limbus, at no time showing any tendency to advance over the pupillary area. In fifteen days, however, the ulcer had spread from its original position, between nine and eleven, so that it came to occupy that portion of the circumference of the cornea which lay between five and two o'clock, leaving but a quarter of the circumference of this membrane free, between two and five. Throughout its course it was concentric with the limbus and varied in width from 1 to 3 millimeters opposite one o'clock; it measured nearly 4 millimeters in width.

Under cocain anesthesia the ulcer was curetted, and over the base and beneath the edges, the flat end of a toothpick saturated with 50 per cent trichloroacetic acid was passed. This, too, failed to check its progress. Fearing to wait any longer a conjunctivoplasty was decided upon and performed under ether.

A flap of conjunctiva was dissected from above and one from below the cornea, and they were drawn over the cornea in such a manner as to leave a small, shuttle-like clear space in the center of this membrane with its long axis between ten and four. The two stitches placed at the limbus were at these points. Both eyes were bandaged three days. After this the unoperated eye was uncovered. The lower stitch, that opposite four o'clock, gave way several days later, and the upper one was removed in a week. The lower flap of conjunctiva gradually receded to its original position, leaving the underlying cornea smooth and healthy. In this portion of the cornea the ulcer had not burrowed very deeply into the substantia propria and, although Bowman's membrane was destroyed and the defect filled in with scar tissue, the resulting scar was much less dense than one would have expected.

Unlike the lower flap of conjunctiva, the upper one remained in position over the cornea, and failed to retract completely to its original position. That portion which remained filled in the upper limb of the ulcer, and formed part of the ultimate cicatrix. However, there was enough recession to insure a free pupillary area.

Fortunately the patient has a slight natural ptosis and only a slight scar. From a cosmetic standpoint the result left little to be desired. Of course, the cicatricial contraction left a rather high myopic astigmatism, but since the pupillary area was not attacked by the ulceration it is regular, and with correction the patient's vision is 20/30.

The technique of conjunctivoplasty presents particular difficulties, and is familiar to you all. Care should be taken to make the flap large enough so that there shall be the minimum amount of traction on the suture.

Conjunctivoplasty certainly proved of immeasurable value in the case above reported. I am convinced that had I not used it the patient in all probability would have lost her eye.

Not long after the above report was submitted the patient's other eye became involved in a similar manner. Profiting by the experience of the first eye, conjunctivoplasty was practiced earlier and with as gratifying results.

Four-Fifty Sutter.

ACUTE GENERAL PERITONITIS*

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DISCUSSION by Frank W. Lynch, M. D., San Francisco;
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A RATIONAL THERAPEUTIC REGIMEN

THE treatment of general peritonitis differs from that of most intra-abdominal lesions in one major aspect which is not generally enough appreciated and which is the keystone to rational and successful therapy. The feature which differentiates it from other lesions is this: the disease and its involved area cannot be treated directly. Only when this is recognized, understood and taught, will peritonitis be coped with properly according to the means now available. The present trend of abdominal surgery is to locate and attack directly the diseased organ, the appendix, stomach, intestine, biliary apparatus, pancreas, spleen, and pelvic organs being numbered among the intra-abdominal viscera which we so treat. The peritoneum, if for no other reason, is eliminated from direct therapy because of its extent.

Granting that the involved area cannot be treated directly, we must then launch our therapeutic attack in other directions, and these are, first, the elimination of the cause, and second, the neutralizing of the harmful influence of the four handmaidens of peritonitis, namely, gastric dilatation, ileus, toxemia, and dehydration.

ELIMINATION OF INCITING CAUSE OF PERITONITIS

The phase of therapeutics involving elimination of the inciting cause needs little discussion. It is generally recognized, and rightly, that the exclusion of a source of constant reinfection is most essential in the proper treatment of infections in large cavities. Hence the removal of a gangrenous appendix, the closure of a perforation, the elimination of a draining focus in rupture or gangrene of the gall bladder and the exteriorization or resection of gangrenous bowel are of paramount importance in removing the cause of peritonitis. Here our intraperitoneal therapy should end. By this I mean that drainage is unnecessary and actually harmful in general peritonitis and that the only excuse for the use of abdominal drains is in creating a path of least resistance for the evacuation of a walled-off abscess. The common use of drains in the peritoneal cavity is a bad habit handed down to us and practiced through fear or ignorance, because it has been done by others before us.

In 1905 a comprehensive study of abdominal drainage was published by Yates.¹ His conclusions were sound and his work warrants more

attention than has apparently been given it. The following conclusions can be drawn from his work:

1. Drainage of the general peritoneal cavity is physically and physiologically impossible.
2. The relative encapsulation of the drain is immediate, while the absolute encapsulation occurs early (less than six hours in dogs) and can be retarded but not prevented.
3. The serous external discharge is an exudate due to irritation of the contiguous peritoneum by the drain.
4. There is a similar inward current from the potential cavity about the drain to the general cavity.
5. Adhesions, under approximately normal conditions, form about any foreign body, their extent and density depending upon the degree and duration of the irritation.
6. Primarily fibrinous, these adhesions become organized in a few days (three in dogs), and if irritation persists they become progressively more mature fibrous tissue.
7. After irritation ceases, their disappearance depends mainly upon mechanical factors—the ability of the involved surfaces to pull themselves or be pulled apart.
8. A drain in the presence of infection is deleterious to peritoneal resistance.

In the light of these conclusions one can see that attempts to drain the peritoneal cavity are not only futile but harmful in that they leave a potential menace in the form of adhesions. This point is graphically illustrated by Meyer,² who reports that 78 per cent of ninety-five cases of acute intestinal obstructions in his series were due to adhesions from previous operations. Even assuming the correctness of Horsley's³ contention that drains reverse the lymph flow we are still unjustified in their use because recent work tends to show that the toxins we attempt to eliminate by drainage are intra-intestinal rather than intra-peritoneal.

NEUTRALIZATION OF TOXEMIA

Having considered the elimination of the infecting focus, the first line of attack in our treatment, we are ready to combat those influences of peritonitis which are its weapons of destruction, namely, those pathological changes leading up to and causing toxemia. In this field, particularly, are we guided by recent research work of clinical and experimental nature which points out that our problem now becomes the same as dealing with intestinal obstruction. The symptoms, blood chemistry and findings in general are identical in the two conditions. The clinical similarity of the two conditions was thoroughly recognized even before the physiological chemists had demonstrated the parallel courses by blood chemistry. Moynihan had said "There is no appendicitis without obstruction," and this statement, if true

* From the Department of Surgery, University of California Medical School.

¹ Read before the General Surgery Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

of appendicitis, is multiplied many fold when applied to peritonitis."

Upon the cause of toxemia in these conditions much light has been thrown by recent work. David⁴ has shown that while bacteria will pass directly into the blood and lymph streams from a normal peritoneum or one containing ascitic fluid, a well-developed plastic peritonitis will prevent this passage. Lesser grades of peritonitis, he has shown, prevent passage into the blood stream but not into the lymphatics and thoracic duct. He concludes that the main problem in peritonitis is not one of septicemia or bacteremia.

Ellis⁵ has recently published an exhaustive work on the nature of the toxin in obstruction and has coordinated the theories of the foremost workers in this field. A summary of his findings is as follows: (1) A poison can be isolated by extraction and precipitation from the intestinal content in high obstruction, which is neither a protease nor heteroprotease. (2) It is not possible to obtain this toxin from normal intestinal content. (3) The poison is identical, judged by means at our disposal, to that found in other conditions such as after adrenalectomy, in portal obstruction, acute pancreatitis, and experimental acute fulminating, nonbacterial peritonitis. (4) The toxin is undoubtedly in the cells of the greater part of the mucosa of the small intestine, but chiefly of the *duodenum*, and is manifestly excreted into the lumen of the intestine, but the larger part into the lymphatic stream. (5) The clinical advantage of gastric lavage may be explained by the removal of the toxic content, favoring thereby an increased excretion into the lumen of the intestine rather than into the lymphatics.

Whether we agree with Bouchard⁶ that the poison is of fatty acid origin; with Nesbitt⁷ that it is neurin; with Clairmont⁸ and Murphy⁹ and others that it is of bacterial origin; with Dragstedt¹⁰ that it is from putrefactive action of bacteria; with Whipple¹¹ that it is heteroprotease in nature, or Williams¹² that it is an anaerobic toxin, the essential point in treatment is the removal of the toxic substance so that it may not be absorbed.

A host of observers have recently advocated enterostomy as the essential procedure in elimination of toxemia. Some have based this procedure on well-controlled experimental work and others have done it empirically because good results have been obtained. Whereas the original advocates of enterostomy chose a point low on the intestine, the recent trend has been to drain higher because results were more satisfactory and because it has been found that the toxic factor is more abundant in the upper small gut. Clute,¹³ in reporting his clinical results in a series of these cases, finally decided that "the higher the drain is inserted in the small gut the better the opportunity of draining the toxic products of obstruction."

In peritonitis or obstruction Macrae¹⁴ recently advocated a high jejunostomy as the procedure

of choice. He makes a plea for prophylactic jejunostomy in cases where trouble may be expected following the primary operation. When the patient's condition is so extreme as to make hazardous the elimination of the infecting focus he contents himself with jejunostomy alone. His argument is well presented and convincing, but it will be hard for any surgeon to relinquish treatment based on so sound a fundamental principle as that of removing the original focus. If you become convinced, as I have, that this principle of intestinal drainage is a sound one and still are unwilling to allow your desperate risk abdominal case to fight with the poorest of weapons against a focus which can be eliminated surgically, you will strive to accomplish both tasks.

And, further, if you could accomplish the drainage of the upper intestinal tract without operation you would consider that your first duty to the patient.

DESCRIPTION OF APPARATUS FOR CONTINUOUS GASTRIC AND DUODENAL LAVAGE

Herein lies my reason for presenting this paper. In 1925 I described an apparatus for continuous gastric and duodenal lavage.¹⁵ There was nothing original or new in any of the ideas involved except that two frequently used medical procedures were combined into an effective method. My reason for describing the mechanism was that I felt tremendous good would be done as soon as the procedure was universally adopted. I still feel this, and I am making a second plea with more than a simple description of the apparatus. My entire attitude and prognosis in regard to general peritonitis has been changed by its use. In former years we had our share of deaths from general peritonitis while a recent survey shows that in the last four years we have not had a single death from peritonitis not complicated by other conditions such as pneumonia, septicemia, or the like.

In a few words, it is a continuous duodenal and gastric lavage by means of a small tube passed through the nostril and attached to a mechanism for continuous mild suction. The apparatus, as shown in the illustration, consists of a so-called Connell suction attached to a duodenal tube. This

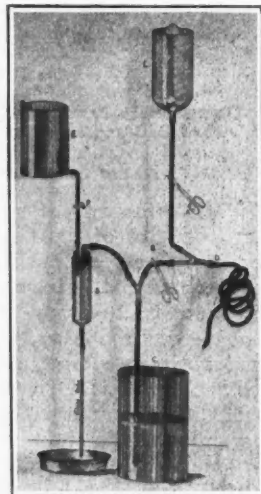


Fig. 1.—Apparatus for continuous gastric drainage. D, Levin duodenal tube No. 14 French, to be slipped through nostril; A, hemostat clamped on tube to lavage solution L, which is changed to B only during lavage; C, drainage tube, the end of which must be kept submerged; S, Connell suction apparatus, the barrel of a triumph syringe fitted with a two-holed rubber stopper. Constant dripping from container E, regulated to about 100 drops per minute by petcock P, causes a mild negative pressure due to the air bubbles carried down the glass tube between drops of water.

tube may be the type proposed by Jutte or Levin and popularized by Matas,¹⁶ but may be improvised simply by introducing a few lead shot as weight into the end of a long Dakin tube with multiple perforations extending for a few inches from the tip. Any tube that can be slipped easily through the nostril will do, but I have found the catheter-tipped Levin duodenal tube, No. 14 French, most satisfactory. All the paraphernalia may be found on hand in any hospital.

The constant dripping from the receptacle (E) produces a mild suction which is comparable to simple siphonage with the advantage that this negative pressure is maintained even after the siphon action may have been destroyed by passage of gas from the stomach. By the use of this apparatus the stomach, duodenum, and upper jejunum can be kept continuously empty of fluid and gas. The relief of bowel distention in this manner overcomes obstruction to a large extent as shown by Gatch,¹⁷ who points out that distention alone will cause necrosis when the pressure within the loop reaches that of the venous pressure. It has all the advantages of a jejunostomy without the disadvantage of an extra surgical procedure in a bad risk case, and, further, the amount and rate of drainage may be exactly controlled, thus eliminating the possibility of persistent dehydration due to jejunal fistula after removal of toxins has been accomplished. Ease of accomplishment and a minimum of discomfort to the patient are two of its attributes. In fact, the comfort obtained by relief from vomiting and distention has made many of my patients beg for its continued use when removal was suggested.

Since the value of Haden and Orr's¹⁸ blood chemistry work has been recognized and their methods of combating toxicity in intestinal obstruction have been put into effect we have come to realize more than ever the importance of a high sodium chlorid intake. These authors have shown that administration of salt solution in large amounts will not only prevent the fatal drop in the blood chlorids but will tend to bring down to normal levels the urea and nonprotein nitrogen. They have prolonged life and brought blood chemistry back to normal by administration of salt solution subcutaneously and by mouth in experimental obstruction. They decided that sodium chlorid has a specific action, not obtained by glucose or other agents, in preventing and controlling the changes produced by the toxin.

With these principles in mind our patients are given daily from 3000 to 8000 cubic centimeters of normal saline solution subcutaneously during their stage of ileus and 4 per cent salt solution is used frequently for lavage through the duodenal tube, thus applying our antitoxic agent directly in the area of known toxic absorption. Our use of glucose solutions intravenously is infrequent compared with subdermal saline therapy. Until the obstructive stage of peritonitis is passed, nourishment, if given at all, is furnished by continuous rectal drip instillation of glucose solution allowing at the same time for the passage of flatus.

Other features of treatment are the avoidance of any attempts to promote peristalsis and the encouragement of intestinal immobility by use of morphin and opium. No attempts to obtain bowel action other than gas-eliminating enemas and rectal tube are used, and the enemas are withheld until the patient's condition indicates complete mastery of the peritoneal infection. Additional comfort to the patient may be obtained by the semireclining (knees slightly flexed) position with its consequent removal of abdominal and diaphragmatic tension. Large hot stupes are applied over the entire abdomen, and these are much appreciated by the sufferer.

SUMMARY

To summarize those measures which we consider essential to the proper treatment of peritonitis we have:

1. Elimination of the cause with as little manipulation and trauma as possible, which means, of course, without the use of any foreign material in the form of drains.
2. Continuous transnasal duodenal and gastric drainage with frequent saline lavage during the stage of dilatation and ileus, this to be instituted at the first sign of distention and continued till the tone of the bowel is restored, as shown by the rapid absorption of saline solution introduced through the tube.
3. The administration of large amounts of normal saline solution beneath the skin to maintain fluid balance and the proper level of blood chlorids.
4. Morphin and opium as demanded for comfort, quiet and peristaltic inactivity.
5. Maintenance of a comfortable position, usually the semi-Fowler, with application of moist external heat to the abdomen.

Of all these procedures, after elimination of the focus, we feel continuous drainage is the most important, and I repeat the sentiment of Bassler¹⁹ expressed a few years ago to a meeting of the Southern Medical Association. If I leave you nothing more than an appreciation of the life-saving value of continuous gastric and duodenal lavage, my work has been well done.

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DISCUSSION

FRANK W. LYNCH, M. D. (University of California Hospital, San Francisco).—Doctor Ward's contribution is exceedingly timely, first, because he emphasizes the futility of surgery in the treatment of acute general peritonitis and, secondly, because he re-describes the apparatus which has proved so helpful to all who know it and which has enabled them to treat rationally a group of cases which must always remain large because there are so many different conditions which may terminate in acute general peritonitis.

At first sight there would seem to be no need of even mentioning surgery as a possible method of treating general peritonitis because leading surgeons gave it up years ago. They had reason so to do because the clinical results were uniformly bad and because experimental work had proved that so-called drainage after incision was not only futile in principle, but was actually more dangerous to the patient in practice than any conservative method. Murphy's teaching did much to drive this lesson home. Yet many who attempt surgery even now do not appear to have learned these facts but continue to operate the general peritonitis case, after the offending focus has been removed, and fill the abdomen with so-called drains, often without the criticism of their better informed colleagues. Therefore Doctor Ward's comments are very much worth while.

The work of Whipple, Hartwell, McKenna, and others has shown that the intestinal secretion is extremely toxic in intestinal obstruction and that it is usually responsible for death if it supervenes: moreover, they showed that the secretion is identical in peritonitis, and in mechanical or in paralytic ileus. They demonstrated the need of gastric and duodenal lavage for any condition presenting vomiting and dilatation of the stomach and intestines. The stomach tube has proved of much value in such conditions, yet the shock of passing a large tube often proves considerable to a sick woman. The small duodenal tubes which can be passed through the nose do not have this objection. Moreover, they can be left in place for several days without occasioning marked discomfort. Yet the tube alone is not of the greatest help. Doctor Ward uses the nasal tube together with the Connell type of suction in an apparatus which makes it possible for one nurse to carry out instantly one of several procedures that otherwise would keep a physician and nurse busy for more than half an hour out of every four. The essayist has reviewed in his paper the arguments which have convinced all of

us who use his apparatus that this method of treatment does all that a jejunostomy can do and without the fundamental objections attendant upon surgery, such as operative shock, the dehydration that may attend the establishing of the fistula, and the fact that such treatment may require subsequent surgery for cure.

The apparatus enables the nurse to use any medication that can be given in solution and has proved of the very greatest value for several years to the many of us who work in the University of California Hospital.

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WAYLAND A. MORRISON, M. D. (1037 Pacific Mutual Building, Los Angeles).—Doctor Ward's apparatus is easily set up and has many advantages. I have used duodenal drainage by means of a nasal catheter for several years. It is the best method of relieving the distressing symptoms of high obstruction which often follow in cases of this type. Doctor Ward's results have been remarkable, and I feel should warrant the use of this method in all cases where it is indicated.

I have always felt that the usual method of draining general peritonitis cases does more harm than good. This is especially true when cigarette drains, with protruding gauze, are used. The wad of gauze causes a severe reaction and is useless. I heartily approve of the method of not attempting drainage in these cases.

I note that Doctor Ward is using glucose by rectum. It has been our experience in the Santa Fe Hospital, and has lately been proved by Dr. J. Pressman in our clinic, that glucose is only slightly absorbed by the large bowel. It has rather a tendency to ferment, and that portion which is not reduced in this way is usually expelled. We believe, therefore, that it is a disadvantage rather than an advantage to the patient. Glucose by rectum apparently stimulates the pancreas and causes a hyperinsulinization, with the resulting increased metabolism. The blood sugar is thus lowered. We feel that glucose solution should be given either into the vein or subcutaneously, and that the chlorides be kept up by saline solution by rectum, and in the manner suggested by Doctor Ward.

PSYCHIATRY IN A GENERAL HOSPITAL*

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DISCUSSION by C. A. Wright, M.D., Los Angeles;
Josephine Jackson, M.D., Pasadena; Henry G. Mehrtens, M.D., San Francisco.

PSYCHIATRY, formerly but a stepchild in the family of the medical sciences, is demanding full membership in the family circle and a voice in its affairs.

The concession of this equality brings with it new responsibilities requiring more extended preparation in neurology, psychiatry and psychology, and closer touch, not only with general medical practice, but also with the affairs of the community, upon the part of the psychiatrist, who has now become "neuropsychiatrist."

Not the least of his activities are in connection with the general hospital, where his technical knowledge and experience can be utilized to good effect in the many problems of such an institution.

UNDERLYING FACTORS IN MENTAL
PHENOMENA

Mental phenomena are in the main reactions to stimuli from within and from without and are conditioned, in the first place, by the original con-

* Read before the Neuropsychiatry Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

stitution of the individual, and in the second, by a multitude of factors, external and internal.

Among these latter not the least is the presence of physical disease and injury with their accompaniments of infection, intoxication, hemorrhage, pain, exhaustion, malnutrition, insomnia, fear as to the outcome, anxiety for dependents, homesickness and general dislike of surroundings as well as disturbances associated with organic changes or perverted function in the vital organs, particularly in the brain. So in the hospital we are particularly apt to find combinations of factors tending to interfere with the normal mental reactions and to render them pathological.

Added to this, the large public hospital is patronized chiefly by the poor, unfortunate and neglected, among whom the number of the inadequate and unstable is disproportionately great; hence abnormal mental phenomena are there to be expected considerably more frequently than among the general population.

In all medical practice, including that of the hospital, attention should be directed to the emotional factors, both those inherent to the make-up of the individual and those arising from other causes. It has been satisfactorily demonstrated that the reaction to disease can be greatly modified by such factors.

Particularly are the temperature, the action of the heart, the vasomotor mechanisms, the smooth muscle fibers of the gastro-intestinal tract and the glands susceptible to the influence of the emotions, and recognition of this fact may help to prevent diagnostic and prognostic errors.

In line with the above the importance of the psychoneuroses, which are built up largely upon an emotional basis, is to be emphasized. It is true that they do not figure so prominently in hospital patients as in an ambulatory practice. Nevertheless they are ever present, and familiarity with them is only acquired through neurologic and psychiatric experience.

PSYCHIATRY IN MEDICAL CURRICULA

It has been insisted that if, in the instruction of our medical students, the time allotted to psychiatry should be devoted chiefly to the psychoneuroses and their problems, the knowledge gained would be of more practical value to them than if it was spent studying the major psychoses, which can rarely be handled out of institutions, while these minor mental affections must, in most instances, be treated at home by the general practitioner.¹

Though this suggestion has considerable force, the writer feels that sufficient understanding of the actual psychoses to make possible an enlightened and scientific attitude toward them should be a part of the education of every physician.

FREUDIAN INTERPRETATION OF PSYCHONEUROSES

According to the Freudian ideas, the symptoms of the psychoneuroses represent attempts at adjustment of submerged complexes, which, being emotionally conditioned, are painful, or at least disagreeable, and so are brought into conscious-

ness only as manifestations symbolic of the hidden material.

While not all of us accept Freud's views in their entirety, the prevalent opinion is that emotionally toned complexes are probably at the bottom not only of many mental reactions, but also of a large proportion of the physical symptoms usually denominated "functional," which so frequently color disease pictures.

The psychiatrist who is—or should be—familiar with such manifestations, whether he practices psychoanalysis or not, is, in his own way, more likely to unearth these hidden complexes than the nonspecialist. He can be of great assistance in tracing to their proper source the many manifestations of hysteria, the great simulator. An important psychiatric problem is furnished by the constitutional psychopath whose defect is emotional unbalance, rather than intellectual defect, and who may show abnormal mental reactions in health, but more particularly in disease. These are the border-line cases between the neuroses and psychoses, always troublesome and sometimes crossing the line to the side of the psychoses so far as to need psychiatric care.

LOS ANGELES GENERAL HOSPITAL SERIES HERE REPORTED

Of the large material of the Los Angeles General Hospital only such cases as have been under care on the medical or surgical wards and have been transferred to the psychopathic department on account of mental symptoms are considered in this paper.

Looking these over, it has been found impracticable at this time to present exact statistics concerning the diseases in which mental symptoms were observed; neither does such a compilation seem desirable in a short review. However, we have gained the following impressions in our work at that institution.

A psychiatric consultation was usually requested because a patient was restless, noisy and disturbing the ward, or because his talk and his actions were such as to suggest the probability of his injuring himself or others.

In order of frequency these phenomena occurred particularly in the following diseases and conditions.

1. In cardiac, cardiovascular and renal disease, with or without focal brain symptoms, especially in old people.
2. An actual psychosis was found to exist independent of some disease or injury for which the patient was hospitalized, or the mental symptoms were not understood by the friends and were thought to indicate a physical illness requiring general hospital care.
3. Psychoses with neurosyphilis, generally paresis.
4. Delirium tremens or more chronic forms of alcohol psychoses, usually as a complication of an acute infectious disease (especially pneumonia) or of cardiorenal disease.
5. The patient was brought to the hospital for surgical treatment, for injuries self-inflicted, or the result of some other insane act.

6. Psychoses apparently due directly to infectious diseases, acute and chronic, or to such diseases as pellagra, pernicious anemia, etc., the symptomatic psychoses par excellence.

7. Psychoses in pregnant or puerperal women.

We have had few or no clearly postoperative psychoses, nearly all patients coming from the surgical side presenting other etiological factors which were probably the cause of the breakdown.

SCOPE OF A SYMPTOMATIC PSYCHOSIS

While it is true that we regard the mental mechanisms as located in the brain, the organ of the mind, we do not apply the word "symptomatic" to psychoses, plainly due to organic brain disease, but reserve this term for abnormal mental manifestations occurring in physical disease, either of other special organs or general in character, as the infectious diseases, acute and chronic, diseases of nutrition, etc., though doubtless the abnormalities observed are connected with some changes in the brain cells, usually temporary, though they may become permanent.

In the hospital the question as to whether or not we have to do with a symptomatic psychosis in a given case is naturally more acute than in the asylum.

The problem is from the nature of things quite complicated. Of all people ill with physical disease only a very small percentage show mental symptoms sufficiently pronounced to attract attention, except in the delirium of acute infections and in agonal conditions.

Possibly systematic investigation of all hospital material by trained observers would show not a few mental abnormalities, though the difficulty of separating normal from abnormal, always great, presents nearly insurmountable obstacles in people about whom we know little.

KRETSCHMER'S CLASSIFICATION

The relation of physical constitution to temperament and character and consequent mental reactions, long recognized, has been of late the subject of much discussion, particularly since the appearance of Kretschmer's "Physique and Character" in 1921.

Kretschmer² recognizes two main types of mental reaction, the "schizic," preponderating in people of "asthenic" or "athletic" body build, and the "cyclic" in those usually of large, rather rounded, but not muscular figure, the "pyknic" build.

The first show many of the reaction types peculiar to dementia praecox.

The cyclics are of the manic-depressive type and react accordingly. He also recognizes many mixed types, which in a country of so heterogeneous a population as ours are probably more common than in the relatively homogeneous material of Kretschmer.

In this type mixed forms of reaction are to be expected. Probably this is responsible for some of our difficulties in diagnosing manic-depressive psychoses from dementia praecox.

Bleuler³ insists upon the importance of affectivity and especially upon the influence of emo-

tionally toned complexes in the production of mental symptoms, particularly delusions.

Upon this idea he builds up his class of the "Psychopathic Reaction Forms," including not only paranoia and a number of more acute disturbances, but also the psychoneuroses. These have as a basis an inability to control or regulate the emotions and a tendency to sudden and violent reactions, the "primitive reactions" of Kretschmer.

Such reactions are common not only with congenital anomalies, but also in disease, since disturbances of circulation and nutrition, intoxication, infection and even long-continued action of strong emotions, cannot but influence the function of the brain cells. Psychopaths, women, children, and old people are thought to react more readily to disease than normal adults.

OTHER GROUPINGS

Anomalies of endocrine function are accused by Ewald, but it has been objected that these are probably only a part of more widespread defects.

Bauer has emphasized known differences in brain constitution; for instance, in children the space between brain and skull is relatively smaller than in adults, which should explain their greater susceptibility to increased intracranial pressure. Possibly a persistence of such infantilism may be a factor in symptomatic psychoses, as may be, also, differences in size and shape of the convolutions and in the constitution and arrangement of the ganglion cells.

This is somewhat in line with Adler's views as to "Organ Inferiority and Its Psychic Compensation."

Susceptibility to toxins and split protein products, anaphylactic phenomena, fever, the depressive effects of disease and resulting exhaustion, which reduces resistance, are also accused.

The influence of circulatory disturbances is well known: a congestion of the choroid plexuses with increased intracranial pressure due to a relative stenosis of the foramina of Monroe has been inculpated, in migraine (by Spitzer), in "angioneurotic hydrocephalus" (by Quinke), while Bauer thinks these structures an effector organ of the vegetative nervous system.

The effect of fever and dehydration has been much discussed. It is certain that in many acute psychoses we encounter the latter, usually with acidosis; so hypodermoclysis and glucose injections have come to occupy an important place in our treatment.

As to symptoms, Kraepelin discussed very fully the deliria of disease, which he divided into febrile, toxic and collapse delirium. The necessity for this division is no longer admitted, and the hope expressed by him that some day we would be able to diagnose the disease causing a symptomatic psychosis through the characteristic symptoms present seems still as far from realization as it was in his time.

We still diagnose syndromes, not diseases.

Bonhoeffer⁵ has expressed the following opinions: The longer, after a physical disease, the

mental symptoms appear the more doubtful is the connection between the two. Amnesic pictures are observed chiefly in adults and old people. If a given person reacts with the same mental symptoms to different infectious diseases, this is an individual reaction form indicating a latent tendency, possibly a manic-depressive one.

He describes the following syndromes of symptomatic origin. "Hyperesthetic emotional weakness"; "Korsakow's syndrome"; "defect conditions of amnesic or pseudoparalytic type"; "acute delirium"; "pictures resembling that of increased brain pressure," and in children, "post-infectious mental weakness." In acute delirium, not only fever but dehydration of the undernourished patient is of importance.

As to catatonia, he says, "There is no catatonic symptom which may not be found in infection psychoses." Stupor in severe catatonic cases may present throughout, the character of that of organic disease.

The close resemblance of the symptoms in an infection psychosis to those of epilepsy suggest an underlying epileptic disposition.

He concludes that we have to deal with typical reaction forms which are independent of the special infectious agent. Differentiation depends not upon the mental picture, but almost always upon the somatic symptoms, particularly upon the neurologic findings.

Both Specht and Kleist distinguish between endogenic and exogenic symptoms. For instance, manic traits running through a symptomatic disturbance suggest the influence of an individual reaction type.

Ewald thinks that bacilli and alcohol have a special affinity for the affective mechanisms of the brain.

Krisch⁴ finds the greatest difficulty in differentiating symptomatic psychoses from dementia praecox, mania with confusion, and epilepsy.

As most important diagnostic criteria he finds delirium, meningism, and particularly the "amnesic symptom complex," a clouding of consciousness of all degrees with subsequent amnesia. "Its glimmer through the disease picture is as important for diagnosis as dementia in paresis."

This is in a sense the elementary symptom, and its recognition permits the prognosis of a symptomatic psychosis as highly probable.

PERSONAL OBSERVATIONS

The length of this paper does not permit the introduction of clinical histories, but some general observations on patients who have been treated at the Los Angeles General Hospital seem not inappropriate.

1. In cardiac cases we have noted, particularly, states of confusion and disorientation, often with allacious perceptions, not rarely with ideas of persecution (of being poisoned, robbed, "railroaded to the asylum," etc.), with restlessness, especially at night. Many of these cases have, however, been complicated by renal disease with possibly an added toxemia, also in the older people by senile brain changes.

In the younger patients a definite relation to the condition of the heart lesion, with exacerbation and remission dependent upon the state of compensation, was noted. Some patients showed manic or depressive reactions, more frequently the former.

The cases under heads 2, 3, 4, and 5 need no special discussion as they have little bearing on the main points of this paper.

6. Psychoses presumably symptomatic. All the febrile cases showed great unrest, confusion and disorientation with hallucinations, generally terrifying, often manic traits; some expressed ideas of persecution.

Cases presenting the syndrome of acute delirium showed hallucinatory confusion with marked restlessness and agitation, often violence and marked resistivity. Many became dehydrated and acidotic and there were a good many deaths. Blood cultures were usually inconclusive as it is extremely difficult to avoid contamination in patients like these. Probably under this diagnosis were included a number of different conditions. Some patients showed positive Wassermann reactions and were presumably paretics. A few autopsies disclosed tuberculosis with meningitis. In the majority of cases the underlying cause was never found.

The few postpneumonic cases were markedly confused and disoriented, had hallucinations, sometimes ideas of persecution. One attempted suicide.

The patients with pulmonary tuberculosis were generally restless and disturbed, a few were exalted, more depressed, ideas of persecution were common among them. These manifestations usually belong to the advanced stages of tuberculosis.

The few cases with Sydenham's chorea were restless and confused, one had hallucinations and later passed into a condition resembling dementia, but eventually recovered.

A case of Addison's disease, seen recently, gave a history of periodic mental disturbance during which he was excited, restless, and heard voices. This seemed to coincide with an exacerbation of the somatic disease and improved under treatment with adrenalin.

Presumably there was an underlying manic-depressive constitution in this case.

The few cases of pellagra were generally in elderly people and were terminal conditions. They showed mainly confusion, or psychoses of senile type, though one younger patient had ideas of being poisoned.

The catatonic reaction type was observed from time to time in patients who recovered, which is in line with Bonhoeffer's experience.

The puerperal cases offer nothing special, having been usually examples of toxic exhaustive psychoses, manic-depressive, or dementia praecox.

PSYCHIATRY INSTRUCTION TO INTERNS

An important part of our psychiatric work is giving instruction to the interns who serve for six weeks at the psychopathic ward, and holding

clinics for the medical students. Also our undergraduate nurses are now detailed to the psychopathic ward for part of their training and we try to teach them some elementary notions in psychiatry.

They seem to appreciate this training, and we hope in time to arouse an interest in this branch among our graduates. Postgraduate work is also offered, and nurses from this and other hospitals are taking advantage of it. The better educated are showing considerable enthusiasm and some express an intention of specializing in neuropsychiatry.

SPECIAL CLINICS

A neuropsychiatric clinic has been in operation for some time, and a "psycho-endocrine" clinic with a large clientele has been developed through the enthusiasm of Dr. E. H. Williams and Dr. C. A. Wright.

We hope to supplement these eventually with work in mental hygiene and possibly in psychotherapy, from the psychopathic ward as a center.

At least one general hospital in a city of any size should have a small psychiatric annex with a trained personnel, from which, as a center, work in mental hygiene and extramural psychiatry could be developed. This could not fail to be a benefit to the community, even in the less densely populated districts.

We are seriously handicapped by the existing laws, as interpreted by the legal officers of our county, since under these laws we are not allowed to receive a patient at the psychopathic ward without a sworn complaint and order signed by a judge.

I feel that we should work for such modification of these laws as would permit the reception of a mental patient needing hospital care, with a minimum of delay and trouble.

This has been accomplished in Massachusetts and possibly in other states.

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DISCUSSION

C. A. WRIGHT, M. D. (2417 South Hope Street, Los Angeles).—Doctor Allen has discussed in a very interesting manner a phase of neuropsychiatry which has recently been uppermost in the minds of many medical men.

For a good many years psychiatrists confined their efforts largely to making a diagnosis almost entirely from the mental symptoms, except in cerebrospinal lues. The treatment was routine and may be said to have consisted of supervision, 606, (bromids), pills and hydrotherapy.

As Doctor Allen has pointed out, many mental symptoms are associated with abnormal physical con-

ditions, which many times are apparently of etiological importance. A careful study should be made of the patient's general condition, particularly for the foci of infection—metabolic disturbances and endocrine disorders.

For several years I have recognized the close relationship between my specialty, endocrinology, and neuropsychiatry. All are acquainted with the mental symptoms seen in hypothyroidism; hyperthyroidism; Addison's disease; those associated with ovarian activity or inactivity at puberty; menstruation; the menopause and childbirth; also the mental symptoms seen in many cases of pituitary disorder. There is a very definite syndrome associated with hypovarianism, characterized by depression, and which may be associated with suicidal tendencies, headaches, emotional instability, weeping, and other conditions.

A careful study should be made into the endocrine condition of every psychiatric or neuropsychiatric patient. The work of Hoskins, Langfeldt, and others gives hope that much may be accomplished by treatment along these lines.

For the past three years, at the Los Angeles General Hospital, Dr. E. H. Williams and I have conducted a psycho-endocrine clinic for the study of endocrine and border-line neuropsychiatric patients, and last year we had 1306 patients visit the clinic.

Two illustrative cases may be in order:

CASE 1.—One woman, thirty-four years of age, telephone operator, had definite systematized delusions of persecution of paranoid type at each period, together with classical symptoms of hypo-ovarianism. Was completely relieved by three months' treatment with ovarian products and has remained well for several years.

CASE 2.—Another patient, thirty years of age, had hysterectomy at age twenty; definite symptoms of hypo-ovarianism, also depression, emotional instability, finally tried to shoot her sweetheart and attempted suicide. Ovarian products were used orally and hypodermically. Our last report showed a normal patient.

Many such case reports could be made.

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JOSEPHINE JACKSON, M. D. (1971 Morton Avenue, Pasadena).—Doctor Allen has been quick to sense the value of a new line of approach to medical problems, and clever in placing his appraisal thereof at the service of his colleagues, as witness his paper.

Personally I am of the opinion that it might be well at this time, in our speaking and our writing, to make a sharp distinction between psychiatry and psychopathology. The term psychiatry has been applied to the treatment of diseases of the mind irrespective of the underlying pathology. In certain patients the actual brain tissues may be in a state of degeneration, or the mental bias may be dependent on a heredity basis; in other words, the mental disease in such patients was dependent on impairment of the organ itself. Or, in sharp contradistinction, the organ of mind may be intact, its chemistry wholesome and without any hereditary taint; and yet the patient may be falling short in his adaptation to life. Some such term as psychopathology would serve to differentiate these two wholly dissimilar disease entities and suggest something of the necessary approach to treatment.

Doctor Allen, in the early part of his paper, stresses the importance of evaluating the emotional factors that may have entered into the patient's disturbance, not only along the line of mental reactions, but also in relation to circulatory, glandular and digestive malfunctioning. The psychopathologist, when he brings relief from physical symptoms, may seem to press rather hard on the heels of the internist. But since he does this by purely psychic measures no fault will be found.

Another practical point stressed by Doctor Allen is the greater amenability to treatment of the psychoneurotic patient as compared with that of the psy-

chotic individual. For this reason a lesser share of the student's time should be given to the study of the psychoses.

In practical fashion Doctor Allen is working toward added clinical training for nurses, interns, and postgraduates in the treatment of psychiatric cases. His own attitude of clear and sympathetic understanding of the factors at work in the psychoneuroses, and emotional insanities will go far toward solving the problems of medical attendant, family, and patient as well.

Doctor Allen briefly and accurately sums up the Freudian interpretation of the psychoneuroses as attempts at adjustment of complexes that have been submerged because painful and that gain partial expression in symbolic form. The prevalent opinion, according to Doctor Allen, is that emotionally toned complexes are probably at the bottom of many abnormal mental reactions.

Two other important points should be noted: first, that a clouding of consciousness is an elementary symptom in the symptomatic psychoses; and, second, that the symptoms will vary, depending upon the schizic or cyclic background of the patient's psychic pattern.

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HENRY G. MEHRTENS, M. D. (Stanford University Medical School, San Francisco).—I have enjoyed every word of Doctor Allen's paper. It gives us a splendid summary of the manifold phases of the psychiatrist's work in a general hospital and his great usefulness to the institution as a whole. While the paper was written from work done in a municipal hospital, every word applies with equal force to the nonmunicipal hospital. Our experience with a psychiatric ward in Stanford Hospital has convinced us that the noncharity patient needs the service described by Doctor Allen even more than the patient in a city or county hospital. Every general hospital has within its walls many psychopathic cases and incipient psychoses. These patients are frequently a disturbing element in the hospital routine, when on general service. From their ranks come the attempted cases of suicide. At best, they seldom receive much benefit from the most conscientious effort directed toward their physical ailments.

These unpromising groups can frequently get the understanding necessary for their comfort and safety, as well as the possibility of a solution of their troubles, only in a psychopathic ward where an organization exists to care for their needs. The general hospital has the unique and invaluable position of being able to render aid to these patients before they or their families would consent to examination in a psychopathic hospital. Help can be given at a time when it is most effective. I hope that Doctor Allen's paper will so stimulate us that we shall never be satisfied until every good-sized general hospital is equipped to render psychiatric service of the same standard as that furnished by the medical and surgical services. Only thus can we feel that we are doing our full duty to the patients, and have advanced the cause of mental hygiene.

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DOCTOR ALLEN (Closing).—I can only add a remark upon the difficulties which we in Los Angeles experienced in getting a building and in securing an adequate medical staff and nursing force.

As it is, the existing building, erected in 1914, is far from satisfactory. However, through improvements to this building and an enlarged and better organized medical staff, nursing and office force, secured through the efforts of Dr. Martin G. Carter, we are managing to handle a greatly increased material and to accomplish some useful results.

If the whole medical profession of California will stand behind the psychiatrists in an effort to obtain some very necessary modifications of the laws dealing with the psychopathic and the insane, there should be no difficulty in putting California in the front rank in the United States in the matter of the handling of these unfortunates.

ACUTE INTESTINAL OBSTRUCTION—ITS TREATMENT*

By W. B. HOLDEN, M. D.
Portland, Oregon

THE successful management of acute intestinal obstruction depends as much on the treatment before operation as on the operation itself. The general practitioner usually sees the patient before the surgeon. He is called during the first few hours of the obstruction. The suffering is so intense that the patient disregards the various cults and isms and early seeks medical aid. The usual surgical mortality of 30 per cent or more can be lowered to 5 or 10 per cent only by early operation, i. e., the first twelve or twenty-four hours.

THE DANGERS OF MORPHIN

Early operation is prevented by morphin. Morphin obscures the symptoms. The patient is made perfectly comfortable and no one can more than guess at the diagnosis. Obvious, pathognomonic symptoms are entirely concealed. The innocent-looking hypodermic of morphin is responsible for the death of at least twenty-five of every hundred operative intestinal obstruction cases. It seems difficult for the physician to sense the dangers of morphin in abdominal pathology. It is the duty of the surgeon to warn against its use to relieve abdominal pain. It is our opinion that each year in our land, more lives are destroyed by the hypodermic than by automobile accidents. Pain is not in itself deadly, but its relief by morphin often results in death. Patients will endure severe pain for long periods of time and survive—for example in facial neuralgia, sciatica, tabes, arthritis and labor. Relieve the pain of acute intestinal obstruction by morphin for forty-eight hours and the patient will likely forfeit his life.

We are told that we must not give morphin for abdominal pain until we are positive of the diagnosis. Can we be certain that the cause of the pain is not intestinal obstruction? Two of our thirty fatal cases had been given morphin for two days under the diagnosis of gall stones. We shall look in vain for improvement in our death rate until the entire profession discards the hypodermic as a remedial agent in all acute surgical abdominal diseases. We do not need better surgical operations so much as less preoperative morphin. Any surgeon in any community by repeated and continuous admonitions against the use of morphin in abdominal pain can reduce his surgical mortality in referred obstruction cases 50 per cent. In 1925, we had twenty-three referred obstruction cases with three deaths (13 per cent). The mortality of all referred cases previous to 1925 was 27 per cent. The difference represents the results of a campaign of education with my colleagues against the hypodermic in colic.

IMPORTANCE OF EARLY OPERATION

The importance of an early operation is the one point on which all writers on this subject

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agree. With no morphine, most cases would be operated early. Intestinal obstruction operated the first twelve or twenty-four hours will give a mortality of 5 to 10 per cent. Those operated the second day will give a mortality of probably 20 to 30 per cent, operated on the third day approximately 50 to 60 per cent, a small percentage will survive operation on the fourth day and practically all will die if operated on as late as the fifth day. An operation by a novice in surgery on the first day may have a better outcome than one done by a master surgeon on the third or fourth day. There is no medical treatment for intestinal obstruction. Cathartics do damage and nothing but damage.

SURGICAL PROCEDURES

Having established the desirability of an early operation, our plan of management is as follows:

General anesthesia—gas and ether. A long midline incision, extending from the pubis to well above the navel is necessary to readily find the obstruction. Contrary to the usual teaching, we practice complete evisceration. The operating room should be warm—80 degrees or above. The intestines are kept warm by covering with large hot saline napkins, which are renewed as they become cool. Traction on the mesentery should be avoided. The obstruction is readily found and relieved. Constricting bands of adhesions are severed, intussusceptions and internal hernias reduced, a volvulus untwisted, or an impacted gall stone removed. Gangrenous bowel will require resection, though it may be wise to leave both proximal and distal ends of the bowel protruding through the wound and unite them subsequently. Obstructing cancer cases should be done in two stages. The carcinoma is removed at the second operation. Large masses of tangled, adherent, nonstrangulated bowel may be best handled by no effort to break up the adhesions, but short-circuited by an entero-enterostomy. We have never resorted to jejunostomy in mechanical ileus. However, we have used it in paralytic ileus.

The entire bowel is emptied from the duodenum to the point of obstruction. This may be done before or after relieving the obstruction. There are conflicting experimental conclusions regarding the toxicity of the imprisoned bowel contents. Clinically, patients do very much better if the imprisoned contents are removed. This is done as follows:

A short distance below the obstruction, a linen purse-string suture is placed longitudinally in the bowel. The intestine is opened and the flanged end of a large test tube is inserted and the purse string suture drawn tight, the first tie of the knot being clamped with a hemostat. The closed end of the test tube has been previously removed and fitted with a piece of rubber tubing about two feet long. The operator's hands are well anointed with sterile vaselin. Beginning as near the duodenum as possible, the entire intestinal tract is gently and rapidly pulled through the surgeon's

fingers by the assistant. Care must be taken not to make traction on the mesentery. The distal end of the rubber tube connected with the test tube is held by a nurse, while the intestinal contents pour into a basin. Formerly, we had a much longer rubber tube, reaching to the floor. Frequently siphonage sucked the intestinal wall into the test tube completely blocking the tube. A short tube held nearly horizontally prevents this trouble. Occasionally, if there are many seeds, corn or barium in the intestine, the rubber tube may become clogged. The rubber tube may then be removed and the test tube can be cleaned with a curet or gall stone scoop. The test tube has the advantage of simplicity and is easy to obtain. After stripping the intestines once and occasionally twice, the tube is easily removed by unclamping the hemostat on the purse-string suture and loosening the first tie of the knot. As the flanged end of the test tube slips out, the purse-string suture is tightened, thus closing the opening into the bowel. A second line of Lembert sutures finishes the repair of the enterostomy. The intestines are ribbon-like and closure of the abdomen can be done with dispatch. This entire step may be completed in five minutes. The operation should not be long. Obstructed patients do not stand long operations. This method is employed in all cases of obstruction, except strangulated external hernias.

The abdominal wall is closed without drainage. A few cases of gas bacillus infection in the wall have been reported. The writer has been spared that experience. It would seem that this complication is no more likely to occur than after any other intestinal operation.

Gastric lavage is used before operation and for postoperative vomiting. Before using the above-described method of emptying the bowel, postoperative vomiting was distressing. Often gastric lavage was necessary every few hours for several days. Now, it is rare to use the lavage at all. In fact, the convalescence is as smooth as after an appendectomy.

Proctoclysis, normal salt solution, is routine. Hypertonic salt solution (3 per cent) subcutaneously has been used to combat the sodium chlorid deficiency. No cathartic is used. The intestinal walls have been overdistended by the obstruction. Rest is indicated. No food is allowed for two or three days. The bowels will generally move spontaneously by the fourth day. If not, an enema may be given on the fifth day.

Our experience is based on the following cases:

	Cases	Died	Per cent Died
Cancer	22	7	32
Strangulated hernia (all varieties)....	39	6	16
Old postoperative adhesions	62	13	21
New postoperative adhesions	11	0	0
Intussusception	15	2	13
Volvulus	12	1	8
Miscellaneous	10	1	10
	171	30	17½
Referred cases	115	27	23½
Not referred cases	56	3	5½

None of the fifty-six cases in our own practice received any morphin or cathartics. Many of the

115 referred cases had been given both morphin and cathartics before we saw them. No case of obstruction has been refused operation. The deaths include two that died after leaving the hospital, one gangrene of the lung and one abscess of the lung. In both, the abdominal pathology was completely relieved. Intestinal obstruction surgery is either delightful or distressing, depending on early or late operation.

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CHRONIC PYURIA IN CHILDREN*

REPORT OF CASES

By ALBERT M. MEADS, M. D.

Oakland

DISCUSSION by W. W. Cross, M.D., Oakland; William E. Stevens, M.D., San Francisco; George G. Reinle, M.D., Oakland.

FROM a urological point of view one of the important contributions that the pediatrician has made in establishing his specialty is the insistence upon a routine examination of urine in every case. I think that he will admit that in consultation, he many times makes his diagnosis, not by superior intelligence, but by superior care, and insistence upon a thorough examination, which includes an examination of a properly obtained specimen of urine. It is estimated that one per cent of the infants and children in his practice will be found to have pyuria. The presence of pus is the commonest sign of urinary pathology, and may or may not be accompanied by other signs or symptoms.

A large percentage of the acute infections of the urinary tract clear up either spontaneously or under intelligent medical care; these are rarely seen by the urologist. A perceptible number, however, in spite of time, hygiene and medication become chronic, failing to improve at all, or recurring so frequently that the attending physician is at his wits' end. It is with this small group that this paper deals.

CHRONIC PYURIA OF ACUTE INFECTIOUS ORIGIN

Chronic pyuria in children can be classified under two main headings, namely, those that have begun as acute urinary infections without any apparent provoking cause, and those in which infection is secondary to changes in the urinary tract which favor stasis. Chronic pyuria, following an acute urinary infection, is usually secondary to an infection elsewhere and may begin acutely in the course of a tonsillitis, influenza, gastro-intestinal disturbance, et cetera. Often the lack of early treatment allows the disease to drag on into a chronic stage which may last for weeks or months with frequent acute exacerbations. It is surprising how this type of infection re-

sponds to treatment after the original focus of infection has been removed.

Cystoscopically very little is found except inflammatory changes similar to those found in the adult. The pelvic outline and the ureters are normal, save for the inflammatory dilatation.

CHRONIC PYURIA SECONDARY TO STASIS

The cases of chronic pyuria secondary to changes in the urinary tract which favor *urinary stasis*, make up a far larger group than is commonly supposed. This has been emphasized by the several excellent papers that have appeared within the last few years. This obstructive type usually remains silent until announced by an acute infection occurring above the point of obstruction either secondary to an acute infection elsewhere, or an infection of the urinary tract only. It runs a course at first not unlike the usually acute urinary infection but soon becomes chronic, rarely if ever clearing up spontaneously. Unfortunately too many of these cases are treated expectantly with medication only, so that in the intervening time between the onset and final diagnosis much damage is done to the kidneys. Conditions favoring stasis may be grouped under those that are acquired and those that are congenital. The most commonly acquired obstruction is secondary to traumatism or local infection which is followed by stricture of some type. The congenital type is seen largely in children, the incidence of congenital lesion of the urinary tract found at postmortem being from 1.5 to 2.5 per cent. This percentage should be higher because the majority of children with chronic urinary disturbances are neither cystoscoped nor autopsied.

CONGENITAL ANOMALIES FAVORING STASIS

Anomalous lesions, so common in the genito-urinary system, are found most frequently in the kidneys and ureters, although there is no portion of the urinary tract that is exempt. The kidneys and ureters, in the kaleidoscopic changes that take place during development, seem particularly apt to form figures that vary from the so-called normal. The classical kidneys, pelves and ureters of the anatomy are the exception rather than the rule. Eisendrath and Papin, in an exhaustive study of renal and ureteral anomalies have classified kidney anomalies under those of number, volume, form, location, median fusion, rotation, reduplication of the pelves and ureters, anomalies of the pelves and anomalies of the vessels. They have also classified ureter anomalies under those of caliber and form, the latter including congenital stricture, dilation, valves and spiral twists and kinks, all of these potential causes of stasis invite infection and are found only by a careful cystoscopic examination, usually after infection has taken place. The first indication of their presence in the majority of cases is pyuria.

Congenital anomalies of the urinary tract favoring stasis appear in two general zones, the upper, including the kidneys and ureters, and the lower, including the bladder neck and urethra. The upper zone is involved equally in the male

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and the female, while the lower zone is primarily involved in the male and is characterized by congenital stenosis of the internal urinary meatus, congenital stricture of the urethra and congenital valves in the posterior urethra. Occasionally we see a congenital stricture in the internal urinary meatus of the female child sufficiently pronounced to cause stasis. Congenital diverticulum of the bladder is a cause of pyuria, but is not common.

In order to emphasize the importance of careful cystoscopic investigation whenever chronic pyuria is present in children, I have taken the following series of cases which show particularly well the fallacy of long-continued medical treatment. In all of these cases the attention of the attending physician was called to the urinary tract by the pyuria and because of that fact a urological examination was eventually asked for. Several excellent articles in the literature dealing with congenital anomalies of the urinary tract have appeared recently so that the cases recorded here are not new but simply add support to the argument that all chronic cases of pyuria in children as well as in adults should be given the benefit of a thorough and early urological investigation.

Before reporting briefly eleven cases of pyuria due to congenital deformities which favored urinary stasis, I wish to emphasize the fact that a cystoscopic examination not only picks out the congenital types that are improved by surgery, but it also reveals a certain number which can be classified under the head of nonobstructive pyuria, a group which is often neglected but is amenable to proper medical and cystoscopic treatment.

REPORT OF THREE CASES OF CHRONIC NONOBSTRUCTIVE PYURIA

A. Nonobstructive chronic pyuria. The following are examples of three types that have come frequently under our observation:

1. Chronic pyelitis, unilateral or bilateral. In this type the major infection appears to be in the kidney with little or no inflammatory change seen in the bladder. Specimen of urine from the affected kidney shows numerous pus cells.

CASE 1.—P. J., female, age two years; seen October 12, 1928, because of chronic pyuria discovered three months before. Has had periodic attacks of fever accompanied by great increase of the pus in the urine.

Cystoscopic Diagnosis.—Bilateral pyelitis without evidence of deformity of the urinary pelvis or ureters. Treatment and Subsequent History.—Patient responded to internal medications and bladder irrigations.

2. Chronic cystitis and pyelitis. In this type the inflammatory changes in the bladder are very evident and the amount of pus in the bladder urine greatly exceeds that found in the kidney specimens.

CASE 2.—O. D., female, age ten years; seen April 12, 1926, because of chronic pyuria discovered one year previous during a routine examination. How long

before this the pyuria had existed could not be determined. The patient had never had any acute urinary symptoms and had apparently been in good health. The urine showed many pus cells, pus clumps and motile bacilli.

Cystoscopic Diagnosis.—Chronic cystitis and probable pyelitis (only a few motile bacilli were found in the kidney urine). Renal pelves and ureters were normal.

Treatment and Subsequent History.—The patient was pus free after eleven months and has been normal since September, 1928.

3. Chronic cystitis. In this type all the pathology was found in the bladder.

CASE 3.—P. B., female, age six years; seen January, 1929, because of pyuria which had been present since the child was six months old. At varying intervals, she had fever and chills and the urine developed a very foul odor.

Cystoscopic examination showed chronic cystitis, dilated bladder, and a normal upper urinary tract. This case is still under treatment and has not changed perceptibly.

These three cases are representative of a group of children having chronic pyuria which we have seen, and who have responded to treatment in the most part. No congenital deformity was present.

REPORT OF ELEVEN CASES OF CHRONIC PYURIA WITH CONGENITAL ANOMALY

B. The following eleven cases are reported because of chronic pyuria which cystoscopic examination showed to be secondary to congenital deformity located somewhere along the urinary tract.

1. Deformities in the upper urinary tract.

CASE 1.—B. G., female, eighteen months old; seen because of symptomless pyuria dating back six months, discovered during an acute respiratory infection.

Cystoscopic Diagnosis.—Stricture of the right ureter in the upper fourth, right hydronephrosis and hydro-ureter, secondary pyelitis. Diagnosis confirmed by right nephrectomy. Child apparently normal March 25, 1929.

CASE 2.—J. M., female, twenty-four months old; seen June, 1928, because of pyuria and periodic attacks of abdominal cramps dating from birth.

Cystoscopic Diagnosis.—Left hydronephrosis, hydro-ureter and secondary pyelitis. Diagnosis confirmed by a left nephrectomy August 3, 1928. However, a double hydro-ureter and pelvis was found which was not diagnosed cystoscopically. The child is now well and pus free.

CASE 3.—B. K., female, age fifteen months; seen September 25, 1928, because of chronic pyuria. The patient is pale, poorly nourished and does not wish to talk.

Cystoscopic Diagnosis.—Right hydro-ureter and pyohydronephrosis. No evidence of stricture except possibly at right urethral outlet.

Subsequent History.—The child was cystoscoped again April 13, 1929. The pyuria had persisted and the findings were practically the same. The child is doing poorly and operation has again been recommended.

CASE 4.—L. G., female, age nine years; since the age of five, the patient has had abdominal pains every three to six months. That patient was sent to the uro-

logical department because of pyuria which had persisted in spite of removal of tonsils and the usual medical treatment.

Cystoscopic Diagnosis.—Right hydropyonephrosis with stricture at the right ureteropelvic junction. Nephrectomy was recommended, but refused. There has been no abdominal pain since last seen and the urine has been free of pus for seven months.

2. Deformities of the lower urinary tract.

CASE 5.—F. T., male, age six and one-half years; seen September 30, 1926, because of pyuria and chronic gastro-intestinal symptoms. Bladder enormously distended, a poor urinal stream, residual urine 308 ccs. and capacity of 700 ccs. Functional test in two hours was 22½ per cent.

Cystoscopic Diagnosis.—Congenital stricture of the internal urinary meatus. Bilateral hydro-ureter and hydronephrosis, secondary infection of the whole urinary tract above the stricture.

Subsequent History.—This case was seen by Doctor Hinman later and is apparently improving under operative treatment.

CASE 6.—B. T., age two years, eight months; seen February 15, 1926. Six months previous he was examined because of anuresis, after which time pus was found in the urine. He was treated for pyelitis for six months without any improvement when he was seen by Dr. Elmer Belt of Los Angeles, who made a cystoscopic diagnosis of the stricture of the posterior urethra due to two congenital valves which were broken down, apparently by instrumentation. The patient was referred to me and was last seen January 17, 1927, at which time the urine was normal.

CASE 7.—J. T., male, age two years; seen September 2, 1929, because of pyuria, sepsis, and a severe anemia. The patient was referred to me by Doctor Hinman and the case was followed up to January 12, 1929, when the patient died of uremia precipitated by an attack of so-called flu.

Cystoscopic Diagnosis.—Stricture at the neck of the bladder with bilateral hydro-ureter and hydronephrosis plus secondary infection. Functional test was never over 1½ per cent in two hours, but the patient improved remarkably under a retention catheter and was to all outward appearances a normal child up to six weeks before death.

3. Adult congenital cases. Many of the congenital types must die during childhood as did case 7, for only a few cases are seen in adult life that can be definitely said to be congenital.

CASE 8.—A. J., male, age thirty years; seen March 4, 1925, because of chronic pyuria, which he had known to be present for the last three years. The discovery was made after an injury to his left side, but this was probably incidental.

Cystoscopic Diagnosis.—Stricture of the left urinary meatus and also at the ureteral pelvic junction, left hydro-ureter and left pyohydronephrosis. The cystoscopic examination was confirmed by operation, 4000 cc. of pus being removed from a large sacculated kidney. The kidney was not tuberculous.

CASE 9.—J. R., male, age about twenty-two; seen November 5, 1928, because of pain in the left side and pyuria. Patient had complained of this pain since he was thirteen years of age.

Cystoscopic Diagnosis.—Left hydropyonephrosis with stricture at the left ureteral pelvic junction. This was verified by operation, an enormous sacculated kidney being found extending from the diaphragm to the pelvis and containing an enormous quantity of

pus. This patient died twelve hours after operation from shock, probably precipitated by postoperative hemorrhage.

CASE 10.—E. H., female, aged seventeen years; seen July 19, 1928, because of pain in the left side and pyuria which had dated back for over a year. Cystoscopic diagnosis revealed a double ureter and double pelvis on the left side with a pyelitis in the lower pelvis of the left kidney. This was verified on several occasions during cystoscopic treatment. On March 8, 1929, about nine months after treatment began, the patient was apparently well.

CASE 11.—E. K., age thirty years; reported March 9, 1929, because of pyuria and difficulty in starting urine. As far back as he can remember, he has had bladder trouble, being taken by his parents from one health resort to another as a child in hope of relief.

Cystoscopic Diagnosis.—Stricture at the internal urinary meatus, multiple small diverticula of the bladder, bilateral hydro-ureter and hydronephrosis and secondary cystitis and pyelitis with a urine of 500 cc.

Diagnosis was confirmed by operation, a V-shaped section being taken out of the stricture at the bladder neck. The patient was relieved of his old symptoms, gained considerable weight, but his pyuria has persisted, although to a less degree ever since.

Comment.—This case is undoubtedly of congenital origin but unrecognized during the course of years.

CONCLUSIONS

Chronic pyuria is the most common sign of urinary pathology. Its presence should be sufficient cause for a complete cystoscopic examination. The cystoscopic findings alone will determine whether the case is medical, surgical, or both.

251 Moss Avenue.

DISCUSSION

W. W. Cross, M.D. (1624 Franklin Street, Oakland). It is superfluous to say I am interested in this subject. The essayist has covered the ground well. It would appear that this paper should have been read before the general section, as the urologist is familiar with the bacterial infection of the urinary tract, while the members of the profession working in other lines apparently are not impressed.

The mechanical factors encountered can only be corrected by the urologist and must be considered in the proper conduct of patients afflicted with this condition. Young, in his work, discussed them under general infections, the urinary tract participating, and evidently his position is well taken.

Cabot, in his work, gave to Roundtree the credit for working out the pathology of bacterial nephritis. The pathology is definite and the syndrome is constant with wide variation in the individual symptoms. Patients so afflicted usually have a low blood pressure, the nonprotein-nitrogen is not elevated markedly if any. Death is due to terminal sepsis or kidney defeat, the kidney gradually disintegrating. One urologist in New York disclosed in a children's clinic that all the lesions found in the adult were found in children. The infecting organisms vary and multiple infection is not unusual.

As urologists we should be bringing more forcibly the facts which exist in connection with this condition to members in our profession who deal less frequently with them.

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WILLIAM E. STEVENS, M. D. (870 Market Street, San Francisco).—It is most deplorable that infants and children have been and are being neglected so far as

the proper urological methods of diagnosis and treatment are concerned. These little sufferers are certainly entitled to just as thorough treatment as adults. We have cystoscopes now for children, and age is no longer a hindrance. Doctor Denny of Yale has cystoscoped the ureter in a male infant only twenty-nine days old. The youngest infant I have cystoscoped and catheterized the kidney was a female infant four months of age. About 50 per cent of cases of pyelitis in children are cured by conservative methods, but the other 50 per cent require cystoscopy and irrigation of the kidney pelvis. I think we should pay more attention to these young patients because they are certainly entitled to our modern methods of diagnosis and treatment.

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GEORGE G. REINLE, M. D. (204 Dalziel Building, Oakland).—This entire paper stresses the early investigation by the urologist. In the large majority of cases of chronic pyuria, if the focal point of infection were treated, recovery would follow a certain period of medical treatment.

Paulsen of Copenhagen reports a series of forty-three cases of pyuria, thirty-nine of which he cured in the average time of five weeks. Four cases he was unable to cure.

The type of case we are particularly interested in is the type that cannot be cured with medical treatment.

An obstruction may cause pyuria; a contracture of the vesical neck, a stricture of the urethra, a stricture of the ureter itself. Any one of these things, if left alone, will eventually develop as Doctor Meads stated, into a diverticulum, a hydronephrosis, or if the stricture be complete, into a cyst of the kidney. These conditions may continue for years until the renal system has been entirely destroyed, and children continue to be treated with medicine for years before they are referred to a urologist for examination. Before leaving home I looked over case histories of pyuria, and within a short period of time I had found twenty-three histories of pyuria that had been admitted and left the hospital without the urine being free from pus. Probably these patients were not treated long enough, or a cystoscopy not made. I can see there is a hazard in cystoscopy for very young children; that hazard is one factor which should be considered, but not to the extent that children should be denied the benefit of a complete urological survey.

POSTOPERATIVE PULMONARY EMBOLISM*

REPORT OF CASE

By H. K. BONN, M. D.
Los Angeles

DISCUSSION by W. H. Olds, M. D., Los Angeles; Clarence G. Toland, M. D., Los Angeles; Philip H. Pierson, M. D., San Francisco.

AMONG surgical tragedies postoperative pulmonary embolism is perhaps the greatest. There is no experience in surgery that is more terrible than to have a patient who is ready to be sent home suddenly die. No successful method of preventing embolism has yet been devised.

CIRCULATION CHANGES AFTER OPERATION

Walters recently stated that manifold physiologic changes follow surgical operation. Virchow in 1846 noted a tendency toward a decrease in the rate of blood flow following operation. This problem therefore presents many angles, which concern not only the physiology and chemistry of the blood and its coagulation normally, but also those factors which retard or accelerate the

process or modify the nature and structure of the clot. In the opinion of many, mechanical factors, such as the type of breathing which influences the metabolic rate, or the posture assumed in bed, which may retard the circulation, are of considerable import. Merely being in bed and at rest produces a fall in blood pressure. Walters, Hendricks, and Greene also noted a definite increase in the fibrinogen of the blood and, in most instances an increase in the leukocytes. Blood changes, as noted by Allen, in the first ten days after operation are marked by a decided leukocytosis, a decrease in the number of erythrocytes, a decrease in the total fats of the blood and an eleven per cent increase in the fibrin of the blood, associated with a slight decrease in coagulation time, most pronounced about the sixth day.

ETIOLOGIC FACTORS

Rowntree quotes Snell in regard to the occurrence of embolism in the obese and directs attention to a particular group of obese individuals, usually over fifty years of age, who are especially susceptible to postoperative embolism.

Plummer, quoted by Walters, made the observation that thrombosis and embolism practically never occur in those cases of severe cardiac decompression coincident to hyperfunctioning thyroids. This observation gives additional clinical support to the value of increased metabolism in the prevention of thrombosis and embolism. The recent papers of Rowntree, Shionoya, and Johnson on experimental extracorporeal thrombosis are in support of the hypothesis which Plummer stated from a clinical standpoint. Briefly, these experiments on rabbits were made with the use of the extracorporeal vascular loop *in vivo*, and thrombosis occurred normally in from four to ten minutes. However, when one milligram of thyroxin was administered daily for three days to each rabbit, thrombosis did not occur for from twenty to twenty-five minutes. This lengthening in time persisted for three days.

It is more than likely that other factors in addition to slowing of the rate of metabolism, posture in bed, lowering of the blood pressure and retarding of the circulation are responsible for embolism. As Walters suggests, these factors may only set the stage, and infection or changes in blood fibrin or unknown tissue and blood alterations may be the actual causative agents.

Quoting Speed, Ochsner found that there were seven deaths from embolism in 16,696 operations, or 0.042 per cent. Of this series of operations, 5275 were abdominal in type with five deaths, or 0.1 per cent. Of 528 hysterectomies in the series, there occurred one death from embolism, or 0.2 per cent. Cutler and Hunt, in 1562 cases, found 3.52 per cent lung complications, mostly emboli. They believe that one of every eight patients undergoing a major surgical procedure will have postoperative lung complications and that one of every 142 will die from such complications. Wharton and Pierson state that 50 per cent of deaths following gynecologic surgery are caused

* Read before the Southern California Medical Association meeting at Los Angeles, November 9, 1928.

by embolism. Wermbter found a mortality of 0.5 per cent in 13,000 gynecological operations. L. S. Rowntree states that in the Mayo Clinic, pulmonary embolism had a mortality of 9.65 after laparotomy for the year 1926; and more than 6 per cent mortality during the last ten years. More than 7 per cent of all total postoperative deaths since the clinic began were due to this cause. Henderson, in the series 1917-1926, covering all intra-abdominal operations, some 63,245 in number, has brought out that the number of deaths from embolism is approximately the same for operations in the upper and lower abdomen. Thus, in this series, seventy-five deaths occurred from embolism in cases of stomach, gall-bladder and bile-duct operations, and eighty-six deaths followed operations on the uterus and appendages, bladder, and prostate. However, when viewed according to the frequency of operations, considerable difference does exist. The incidence of embolism in the upper abdominal operations is one in three hundred, but in prostatectomy it is only one in sixty. The chief sources of emboli were the iliac, femoral, pelvic, and prostatic veins.

In Speed's reported series of thirty cases of postoperative embolism taken from the records of the Presbyterian Hospital, Chicago, and covering the last fourteen years, there were twenty-three deaths, a mortality of 77 per cent. These thirty cases represent a wide variety of surgical procedures, such as operations on the thyroid, the spine, the gall bladder, the stomach, the appendix, the large bowel, the prostate, the kidney, the long bones, the uterus and tubes, and varicose veins.

From a strictly urological viewpoint, V. C. Hunt's review of one thousand suprapubic prostatectomies, done for benign hypertrophy, is most interesting in that there were fifty-four deaths, eight of which were due to pulmonary embolism.

As regards anesthesia, in Speed's series, all types were used; ethylene alone or with ether, gas oxygen alone or with ether, ether alone and novocain intrasacral. There is apparently no especial relationship between anesthesia and embolism to be noted in this series. However, as regards postoperative complications, A. H. Miller, in reviewing a series of five thousand cases, found that pulmonary embolism was one-half more frequent after gas oxygen than after ether. Exact percentages are not given. Further, it has been noted by Shilling that embolism occurs in 0.04 per cent of cases occurring after the use of local anesthesia.

CLOT FORMATION

A restatement of the supposed elements necessary to produce a clot is pertinent as a starting point in discussion of the subject. Howell's theory of the clotting of the blood, considered to be the best by many, is as follows:

Coagulation Factors in the Circulating Blood. Prothrombin, from platelets; antiprothrombin (heparin), from liver; calcium; fibrinogen.

The Mechanism of Clotting.—Cellular elements yield thromboplastic substances. Thromboplastic

substance neutralizes antiprothrombin. Prothrombin plus calcium equals thrombin. Thrombin plus fibrinogen equals fibrin equals clot.

Speed considers that the certain elementary factors absolutely necessary to produce intravascular thrombosis of blood are:

1. Thrombokinase derived from the body tissues—probably liberated by a wound trauma—finds its way via lymphatics or an open vein into the blood stream in small amounts.

2. Venous stasis must be present in or near the great veins. The presence of bacteria and toxins causing corpuscle disintegration and trauma likely aid these two principal factors.

KINDS OF THROMBI

Speed divides pathologic thrombi into two classes: aseptic, which are of friable consistency and prone to become detached and assume embolic power only in the early stages of development; and septic, which are constantly undergoing softening and disintegration and are likely to give off emboli at any and all times.

Further, emboli may be classified as to size of the emboli and the position and caliber of the occluded artery. First, a large embolus producing practical occlusion of the pulmonary artery, either on one or both sides, cuts off the blood from one or more lobes of the lung, and pulmonary edema follows rapidly, death resulting in practically all cases. Second, moderate sized emboli may pass the main vessel and become impacted in smaller vessels, thus producing infarcts in the lung, with possible pneumonia, pleurisy, or gangrene abscess as sequelae. Speed states that this group has a mortality of 12 to 15 per cent. Third, small emboli, or showers of emboli likely occur and are unnoticed and usually not diagnosed. Small pulmonary infarcts are produced with few physical findings and symptoms. Recovery ensues unless the infarct is septic, when empyema or lung abscess results.

Coughlin believes that embolism occurs much more frequently after the first postoperative week than prior to this time. The average time of the appearance of symptoms in twenty-three fatal cases, as reported by Speed, was seven days, the shortest was one day, and the longest twenty-three. Speed states that massive embolism occurs in the first week and pulmonary infarction comes during the second week. Speed's paper was read originally at the 1926 meeting of the Western Surgical Association. Coughlin, in discussing this paper, asked about one hundred general surgeons who were present to indicate by a show of hands the deaths from embolism that they had seen during the first postoperative week. About ten hands were raised. Then Coughlin asked concerning deaths from embolism occurring during the second postoperative week or thereafter. At least seventy hands were raised.

Embolism in cases of phlebitis is decidedly uncommon, according to Coughlin. Brown, in 150 cases of postoperative phlebitis, noted that embolism was rare. Thrombosis was noted in seven

cases by Speed, involving the leg six times and the thigh once.

The primary symptom of embolism, a sharp pain in the chest referred to the midline or substernal or epigastric areas is, of course, well known. Where the embolus is massive, chest findings have been negative because death ensued so quickly that adequate examination was not possible. In those cases which survived long enough to permit examination, crackling râles could be heard over the lower lobes. Speed suggests that possibly the most significant precursor of embolism is a low evening temperature, although this of course, may be absent. Acute cardiac dilatation and myocardial degeneration must be differentiated in the nonfatal cases.

SOURCES OF EMBOLI

Commonly it is supposed that emboli originate in the pelvic veins. The left iliac vein especially is considered to be the common site of pulmonary embolism because of the anatomic reason in the crossing of the arteries. However, Aschoff, in making autopsies on cases dying of pulmonary emboli invariably found extremely long emboli in the pulmonary artery. Frequently these emboli were folded on themselves and were entirely too long and too large to have come from any pelvic vessels, even the iliac. These emboli have averaged from 34 to 40 centimeters in length, that is from 12 to 18 inches and as large around as one's finger, when unfolded. Aschoff believes that these emboli came from the femoral veins but were not connected by continuity with the thrombi that may also occur in the pelvis. Aschoff does not believe that these emboli are due to sepsis and states further that no proof that a focus of infection in any given place can cause thrombosis in distant vessels unless it be by embolus or by continuity.

Speed also believes that massive thrombi must certainly come from the large iliac veins or their branches as well as from those veins in the broad ligaments. Further support of Speed's belief is to be found in the report of Cleland and Barlow, who found that 2.5 per cent of all autopsies showed pulmonary emboli and in every instance the original clots were found in the leg veins. Speed states that the common source of emboli is not in the saphenous veins, and instances De Quervain's case of fatal pulmonary embolism on the tenth postoperative day wherein resection of both saphenous veins had been done prior to a hernia operation.

In support of the premise that the unknown thrombus originates in the iliac veins, Speed gives many types of embolism, wherein thrombosis extended to the iliac veins by direct continuity, as for instance, after radium insertion in the pelvic organs. Embolism has followed the injection of bismuth paste and may occur during the manipulations incident to preparation for amputation.

Against the possibility of lung emboli originating in the thrombus of a saphenous vein is Magnus' observation that the blood stream in this vein is centrifugal when the individual is in the

upright position or walking. Also the peripheral part of the vein remains empty if the central portion is compressed.

Aschoff believes that thrombosis in the femoral vessels is always due to stasis which in turn is due to either a weak heart following operation or shock, a hemorrhage, or a position of the patient that retards circulation, such as lying in one position upon the back, perfectly still, with the lower extremities slanting to a lower level than the body.

Cutler and Hunt ascribe embolism to sepsis, easy pathways to the lung and pleural cavity by blood vessels and lymphatics, splinting of the abdominal wall by pain through partial inhibition of diaphragmatic movement.

On the other hand, it is significant to note that while there are large numbers of compound fractures of the leg and thigh, embolism is rare but fat embolism is not uncommon. Coughlin, who has had a large experience in compound fractures, says that he has never seen a death in these cases, except those that were infected, yet in this type of injury the patient is usually kept quiet.

Boyd states that emboli originate from either veins, such as inflamed pelvic or uterine or varicose veins of the leg, or from the heart, a thrombus being formed in the right and left auricular appendix or springing from vegetation on the mitral or aortic valves.

If it is true, as Hampton and Wharton believe, that the primary causes of thrombosis are infection and trauma, the secondary causes being slowing of blood stream and changes in the blood, why does embolism occur after perfectly clean operations? Here hemorrhage, as in fibroids, prior to operation could affect only one factor, that of blood change. It is acknowledged, of course, that no operation can be done without some trauma nor without some organisms being introduced, yet these cases are all considered surgically clean.

Femoral thrombosis is presumed to appear in the second or third postoperative week, which suggests that its causation may be different from that of pelvic thrombosis. Speed states that pelvic thrombosis without operation rarely causes embolism.

In 205 instances of thrombosis, in the series of Hampton and Wharton, 66 per cent were in vessels of the left leg, 24 per cent in the right leg, 9 per cent in both legs. The left femoral vein was involved in 40 per cent of the cases, the left saphenous in 12 per cent, and the left popliteal in 2 per cent. Pulmonary complications of these 205 cases of thrombosis showed: 70 per cent pulmonary infarcts; there were 1.5 per cent pulmonary emboli (three patients) with only one death; 85 per cent of autopsy examinations showed the point of origin of the embolus to be in the pelvic veins.

PREVENTIVE MEASURES

It is of course hardly necessary to reiterate that foci of infection, whether of tonsillar or dental origin, should be eliminated before operation; and

that body fluids should be increased, and the patient not be starved before operation. The condition of the heart and lungs should be carefully checked. The tranquillity of mind, induced by the preoperative dose of morphia, more than offsets its effect in slowing of the blood stream.

It is of especial interest to note that Walters has used desiccated thyroid prior to operation in three thousand cases, no embolism occurring in any patient under seventy years of age.

During the operation, pressure anywhere on the body is contraindicated. Roughness in operation is to be condemned and sharp rather than blunt dissection is to be desired. Long-continued retraction, with constant pressure on small veins, may induce thrombosis. It is inadvisable to leave clots in the operative field, and mass ligatures do not aid matters. Thorough drainage in septic cases is advocated so that the process may not spread and absorption occur.

Kennedy and Coffey have insisted for years that the thighs be flexed and gentle massage of the legs be done, beginning the day after an operation, in order to exercise the patient. Bardenhauer, with the same idea, has used a system of calisthenics for years, so that the patient would not be weak when ready to be out of bed. Yet, apparently, such exercises play a part in the prevention of embolism since Kennedy has had one thousand operations for uterine myomas without serious lung complications.

Tight dressings, such as spicas which possibly produce venous stasis, are to be avoided. Drastic cathartics, producing severe straining efforts at stool, are inadvisable.

After hearing Speed's paper, I utilized his advice on the first patient presenting for operation.

REPORT OF CASE

This patient was a woman of forty-six, a diabetic, having a bilobed uterine fibroid with an additional right intraligamentous fibroid. The patient had been carefully prepared, the performance of the operation was not technically difficult and the convalescence was smooth. All of the advised precautions had been used, except the use of desiccated thyroid. On the fourteenth postoperative day, while sitting in a chair, she felt faint for perhaps half a minute. The sensation quickly passed but was repeated the next afternoon and again she quickly recovered, each time without any medication. On the sixteenth postoperative day at 11:30 p. m., she was awakened out of a sound sleep by the usual cardiac or pulmonary pain of embolism and died in twenty minutes. Postoperative fever was not present after the first three days, nor was the temperature low. The incision was clean.

The two fainting attacks, even though transitory, were probably caused by small emboli, precursors of the massive embolus. Having tried advice given as to prophylaxis with a fatal outcome, I am now wondering if exercise may not loosen emboli instead of preventing them. Certainly, any attack of faintness occurring during the first seven to fourteen postoperative days, especially if associated with pain in the abdomen

or femoral regions, is to be carefully investigated and given due consideration.

SURGICAL TREATMENT

The operation suggested by Trendelenburg was based upon the premise that in probably 50 per cent of the cases of massive embolism only one branch of the pulmonary artery was occluded and prompt removal of this embolus would save the patient.

The technique is described in most surgical textbooks and need not be reiterated here. It is to be especially noted that forty-five seconds may be allowed between opening the pulmonary artery under pressure and the removal of the clot. A larger interruption of the circulation means certain death.

Kuschner, according to Speed, presented in 1924 the first patient cured of pulmonary embolism by a Trendelenburg operation. This patient had a massive embolus on the third postoperative day. The operation was done fifteen minutes later with the patient moribund. The large vessels were closed off for forty-five seconds, during which time the artery was opened and the blood clots, 17 centimeters in length, were removed. Werbster is also quoted by Speed as having successfully operated upon a case of massive pulmonary embolism, the patient dying of intercurrent disease in a few days.

520 West Seventh Street.

DISCUSSION

W. H. OLDS, M.D. (607 South Hill Street, Los Angeles).—Doctor Bonn has given a very complete review of the subject of postoperative pulmonary embolism. There is little that can be added.

Small pulmonary emboli following operation, I think, are not uncommon. Frequently patients complain of sharp pains in the chest, usually low down on either side. These pains last from two to ten days, then pass away. They are probably due to emboli which lodge in the smaller vessels.

Another condition which can be and probably frequently is mistaken for pulmonary embolism is a small collapse in the lung. Thick mucous plugs lodging in a small bronchus, depriving that portion of the lung supplied by it of air, will result in a small area of collapse. This is exactly analogous to the postoperative massive collapse of the lung. How one could differentiate this condition from small pulmonary embolism I do not know.

Unfortunately in these conditions the x-ray is of more theoretical than practical value. The beautiful fan-shaped infarct seen at autopsy is not often noted by x-ray. The small infarcts and the small areas of lung collapse cannot readily be differentiated from bronchopneumonia.

In the few cases of pulmonary embolism which I have seen, it has been my observation that the pulse rate has previously been abnormally high. This is probably due to some extensive thrombosis or phlebitis which disturbs the sympathetic nervous system through fibers in the affected veins.

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CLARENCE G. TOLAND, M.D. (902 Wilshire Medical Building, Los Angeles).—An embolus is a moving body in the blood stream, later lodging in an artery or in one of the branches of the portal vein.

Usually an embolus is a thrombus beginning in a vein, the heart, or an artery. However, there are other materials that may float in the blood as emboli, such

as tumor cells, bunches of bacteria, fat globules, and air bubbles.

Emboli usually start from a vein, such as thrombosed varicose veins, inflamed pelvic veins; also from inflamed veins about the appendix, gall-bladder area, stomach and duodenal ulcers and, lastly, the heart.

We have two types of thrombi from which an embolus may float: (1) Aseptic, as noninflammatory vegetations from the aortic or mitral valves of the heart. (2) Septic emboli, by far the most common, come from inflamed veins, areas of acute endocarditis. Such an embolus may give rise to an inflammation of the veins and artery in the same location, and from this a metastatic abscess may form if the infection pass through the walls of the vessels. A part of the vessel wall may weaken and form a small aneurysm and later the aneurysm may rupture and, as Boyd said, "probably this is the cause of cerebral hemorrhage in young people."

The amount of tissue affected may be small or extensive, even to the loss of a part, as a limb. The obstruction may be slow or rapid. When rapid the tissues affected die quickly.

To prevent an embolus is beyond us, but many men in the profession are doing their best to prevent it.

Doctor Bonn has quoted Kennedy, Coffey, and Walters as to their respective methods to prevent thrombus formation, thereby eliminating to a certain degree the cases of embolism. We all believe that it is important to listen to the advice of all these men.

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PHILIP H. PIERSON, M.D. (490 Post Street, San Francisco).—This paper discusses postoperative pulmonary embolism in a somewhat different manner than most papers on this subject. We are all aware, as stated, that small pulmonary emboli are of frequent occurrence after operation and, of course, generally of very little significance. Sterile emboli rarely cause any symptoms when lodging in a healthy field (one where there is no infection and where the circulation is normally maintained). But these sterile emboli often prepare the field for subsequent attack by either sterile or infected emboli which cause trouble. The recent work of Holman is to be mentioned along this line, showing the difference in the effect in the pulmonary field when an embolus travels into the bronchial artery from that which occurs when it travels in the pulmonary artery. As the bronchial artery nourishes the lung tissue more than the pulmonary artery, occlusion of branches of the bronchial artery often leads to more damage than in the pulmonary artery. The appearance of symptoms is not coincident with the mobilization of a thrombus, for very often when the embolus does not affect the peripheral part of the lung, involving the pleura, no pain is felt for several days. Infection developing in such an area may not manifest itself for from five to nine days. Doctor Bonn has mentioned the question of passive and active motion. It is true that gentle skin massage is of great value in promoting healthy circulation, but deep massage and more energetic exercise, I feel should be avoided for at least two weeks following operation in order that the thrombi may become well organized, thereby diminishing the danger of embolism. Of utmost importance is maintenance of healthy circulation in the lungs as a preventive of trouble resulting from small emboli. Frequent change of position, deep breathing—where possible—will aid this to a very considerable degree. The preparation of the patient before operation, clearing up any pulmonary infection and any disease in the mouth is most important. Some abscesses are favored by aspirated material from the mouth and, during the first few days following operation, the patient is quite unable to take the care that is necessary of his teeth, and from this source there is no question that some bacteria are planted in the lungs.

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DOCTOR BONN (Closing).—Since this paper was completed, the article of Miller and Roepke on "Thrombosis and Embolism" (Zeit. f. Chir., 1928, Vol. lv.,

p. 224), has been abstracted by the *International Abstract of Surgery* of November 1928. This article discusses the pathologic-anatomical aspects of thrombosis and embolism in an admirable manner and is perhaps the most complete exposition of the subject from this standpoint. Dietrich, Ritter, Freund, Ruff, Butzengeiger, Stegeman, Colmen, Naegli, and Killian also discuss this article, and it is interesting to note that there apparently exists abroad as much divergence of opinion on the various angles of this subject as here.

THE ASCHHEIM-ZONDEK HORMONE TEST FOR PREGNANCY*

By HARRY E. KAPLAN, M.D.

Stockton

DISCUSSION by John C. Irwin, M.D., Los Angeles; Ludwig A. Emge, M.D., San Francisco; Gertrude Moore, M.D., Oakland.

MY purpose in presenting this article is to report briefly my experiences with the Aschheim-Zondek test for pregnancy which I had the opportunity of observing last winter in the laboratories of the Jewish Hospital of Brooklyn, New York.

NEED OF A DEPENDABLE TEST

There has long been a want for a desirable and dependable laboratory test for pregnancy. Erdheim and Stumme,¹ pointed out that during pregnancy marked changes in the histologic structure of the anterior lobe of the pituitary gland take place. Smith and Engle² and Evans and Long³ demonstrated that the injection of anterior lobe of the pituitary gland into mice and rats caused marked enlargement of the ovaries. Aschheim and Zondek,⁴ confirmed these observations and discovered that during pregnancy there was a striking overproduction of the hormone of anterior lobe of the pituitary gland, leading to its excretion in the urine. They also found that the subcutaneous injection of urine of pregnant women into immature female mice was followed by striking alterations in the ovaries, manifested by swelling, congestion, hemorrhage, and the premature maturation of the ovarian follicles. These changes were easily visible to the naked eye. Louria and Rosenzweig⁵ carried out this test in one hundred and thirty-two cases. Eighty-seven specimens came from women in all stages of pregnancy and showed a positive reaction in 98 per cent. For controls they used the urine of non-pregnant women, among which were the urines from patients with fibroid uterus, ovarian cysts, functional amenorrheas, as well as normal women in the premenstrual and postmenstrual epochs and in the menopause. Specimens of urine from males were also injected for controls. These showed a negative reaction in 91 per cent.

THE ASCHHEIM-ZONDEK TEST

The Aschheim-Zondek test is performed on female white albino mice, ranging in age from four to six weeks, their weight averaging about

* Read before the Obstetrics and Gynecology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

fifteen grams. Three-tenths of a cubic centimeter of urine is injected subcutaneously three times a day for three days. The injections should be at least three hours apart, although they can be separated by more time. It is best to use a rustless needle for the injections. The mice are autopsied on the third day following the last injection or the sixth day after the first injection.

The morning specimen of urine is preferable, although the casual can be used. It is very important not to let the urine stand around and it should be used the same day. It is also very important to keep the urine on ice. A clean bottle should be used for collecting the urine.

The autopsies reveal marked changes in the immature ovaries, such as swelling, congestion, hemorrhage and maturation of the follicles. There is also an associated enlargement and engorgement of the uterus and tubes, but in accordance with the views of Aschheim and Zondek this was interpreted as being secondary to increased ovarian activity. The ovaries in immature mice are small pale bodies. On autopsy, following the injection of the urine of pregnant women, the ovaries of the mice become enlarged to three times the normal size and have a pinkish red appearance. The hemorrhagic areas are visible to the naked eye and stand out prominently on the surface of the ovary. The premature ripening follicles are easily seen as small yellow spots.

The earliest case of pregnancy examined was in a woman whose menstrual period was seven days overdue. There were several other women in the first three weeks of gestation, all of whom showed a positive test. The importance in this type of case is obvious in that a diagnosis of pregnancy is possible before physical examination is positive, thereby differentiating the pregnant uterus from the slightly enlarged nonpregnant uterus.

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DISCUSSION

JOHN C. IRWIN, M.D. (1709 West Eighth Street, Los Angeles).—I have had no personal experience with the Aschheim-Zondek test of pregnancy, but in July of 1928 had the opportunity of meeting doctors Aschheim and Zondek and watching their work at the Charité Frauenklinik in Berlin, where the test was perfected. At this clinic I saw Professor Wagner operate upon a case under a diagnosis of left broad ligament fibroid and prove the preoperative diagnosis. This diagnosis had been made because of a negative test for pregnancy in the face of a typical textbook history of extra-uterine pregnancy. This case shows the reliance placed in the test at that clinic. Similar results were being found at the clinics in Vienna, where all who had undertaken the test were enthusiastic about it.

In Berlin I was given the following figures by Doctor Aschheim:

The test was positive for pregnancy four times in two hundred and fifty-eight nonpregnant cases. In thirty-two cases of five to six weeks' pregnancy thirty were positive, and two were negative; in thirty-six cases of seven to eight weeks' pregnancy thirty-six were positive, and none were negative; in one hundred and three cases of three to ten months' pregnancy one hundred and one were positive, and two were negative; in twenty-six cases of unknown duration of pregnancy twenty-six were positive, and none were negative; or four negative reactions in one hundred and ninety-seven cases of pregnancy which equals two per cent errors.

This percentage of error is so small as compared with the Abderhalden and other serum reactions for pregnancy that it seems we can at last discard the older methods. The reliability of the test and the ease with which it can be done makes it possible for every hospital or commercial laboratory to furnish us a quite accurate diagnosis of early pregnancy in the puzzling case. The technique described by Doctor Kaplan is the same as that used by Aschheim and is much more easily executed than the Abderhalden or any other serum test with which I am familiar. The only difficult part of it is having female white mice at three to four weeks of age just at the time when the test is to be made, since immature mice must be used. The observations can be made with or without the aid of a microscope, which is time-saving as a laboratory procedure.

I am glad Doctor Kaplan has brought this test to our attention, and I hope that at least one laboratory in each California city will undertake this test for the profession, as it would no doubt help us in many cases where there is a question of early pregnancy.

✽

LUDWIG A. EMGE, M.D. (2000 Van Ness Avenue, San Francisco).—As far as I can learn from the literature the Aschheim-Zondek test for pregnancy offers the highest percentage of correct diagnoses of any tests so far introduced for the same purpose.

The real value of this test centers in the aid it offers in the diagnosis of pregnancies obscured by tumors and in the diagnosis of extra-uterine gestation. Since the test has proven itself dependable in these groups, its value will be inestimable. The test in itself is simple, and were it not for the constant necessity of having immature mice on hand, could be handled by any good laboratory. The mouse problem complicates matters considerably and confines the test to institutions whose large breeding pens furnish a constant supply of very young mice. In our laboratory at the Stanford women's clinic, Doctor Fluhmann is working at present on a serum modification of this test. His observations are very promising.

Doctor Kaplan's concise report is very gratifying and creditable for bringing this test to the attention of the profession at large.

✽

GERTRUDE MOORE, M.D. (2404 Broadway, Oakland). Doctor Kaplan's paper is indeed timely in bringing to the attention of the medical profession a test of such practical value. Our experience with it for the past year has led us to conclude that it is simple in performance, easy of interpretation, and reasonably reliable. Its accuracy in the hands of most workers compares favorably with that of other laboratory procedures. The statement has been made that the test is impractical because the average pathologist cannot have the necessary immature female mice always at hand, but this difficulty has been met in our laboratory by purchasing these animals from commercial producers at the time that the test is ordered. We have found this plan very satisfactory and urge its trial by those who have looked upon this as an insurmountable obstacle, feeling sure that they will conclude, as we have, that it is the only test ever proposed for the diagnosis of pregnancy which is worthy of serious consideration.

PAINFUL EAR NODULE OF WINKLER AND FOERSTER*

REPORT OF CASES

By GEORGE D. CULVER, M.D.
San Francisco

DISCUSSION by Laurence R. Taussig, M.D., San Francisco; H. J. Templeton, M.D., Oakland; Samuel Ayres, Jr., M.D., Los Angeles.

WINKLER should be given credit for first calling attention to this distinctive pathological condition of the auricle.¹ Foerster deserves credit likewise for having called attention to it without knowledge of Winkler's work, designating it "painful nodular growth of the ear."² The term applied by Winkler, "chondrodermatitis nodularis chronica helix," may impress one as cumbersome. It could well be shortened by leaving out "chronic." Sequeira selected "keratoma auriculare."³ Nothing, however, could be simpler or more direct as a name than "painful ear nodule."

PATHOLOGY

Since attention was called to the condition by Foerster and by Winkler it has been found to be a much more frequent occurrence than was apparently first thought. Many physicians must have seen and treated painful nodules of the ears in the past, without having so classified them. In looking over records antedating the work of Winkler and Foerster I found notes describing fairly definitely the condition, and yet I must have had only a hazy mental picture of it. Since then, while on the outlook for such lesions, I have found them, and have had the opportunity to try different methods of treatment. An instance of a decided failure with a case in 1915, which was treated with temporary success two years later, helped to clarify my idea of the lesion.

Foerster's description is worth repeating: "An ovoid or circular well-defined nodule, varying from three to ten millimeters (usually less than five) in its longest diameter, embedded in the skin or elevated several millimeters above the surface, and in most instances found to be immovable and firmly attached to the cartilage. The nodule is flat-topped or convex, with sloping sides, and it often has a deep or shallow central depression filled in by a more or less adherent crustlike scale. Removal of the scale discloses either an irregularly cupped depression or a pinpoint to pinhead-sized defect or area of ulceration with a red and moist base. The nodules may be skin-colored, grayish, rose red, yellowish or waxy and somewhat translucent, bearing at times a resemblance to epithelioma. A narrow zone of hyperemia is occasionally seen around the lesion and, except for this, the adjacent skin is normal in appearance."⁴

The cutaneous and subcutaneous changes have proved to be inflammatory when the dermatologist's attention is called to the defect, usually chronic to the extent of definite nodular thickening topped by keratotic changes in the epithelium, the keratosis often covering a central point of ulceration. The inflammatory process extends to

and involves the perichondrium and chondrium. Many features of the lesion, which can be seen while it is being removed, as well as the reaction of the area of the ear to treatment, would seem to indicate something fairly definite in the etiology.

Though the location is most frequently that of the region of "Darwin's point" of the ear, which on most ears is the sharply curved posterior superior portion of the border of the helix, an exact replica of the pathologic change can occur on the helix anterior to or below this point, or upon the antihelix, particularly when the antihelix is prominent in its outward projection beyond the border of the helix.

It is not the purpose of this paper to go into the histologic study of painful ear nodes. It would be difficult to more clearly describe the pathologic findings than has been done by Foerster,⁴ Rost,⁵ Roxburgh,⁶ Dubreuilh,⁷ and recently by Mierowsky.⁸ Other points of interest would seem to warrant careful consideration, however.

Not until Foerster's original article was read before the American Dermatological Association was it our habit to segregate instances of painful ear nodules as they were not then recognized as a clinical entity. Since 1918 there have been twenty-six typical instances in the practice of Doctor Montgomery and myself.

REPORT OF CASES*

CASE 1.—Mrs. A. P., female, forty-three, housewife, a former patient with ichthyosis, had a minute tender keratotic topped nodule on the edge of the helix of the right ear at its upper posterior curve (usual location). The tenderness was the main feature. The small keratosis with the soft tissue under it was curetted, and trichloroacetic acid was applied to the base. Healing was perfect, leaving a smooth surface. Two months later there still remained some tenderness, but the skin covering was intact and smooth. There was an interval of two years, during which time the tenderness had persisted, and another nodule had formed. Because of the previous failure to remove the tenderness the soft tissues were cut through and nearly one centimeter of the edge of the cartilage was trimmed off with scissors to a depth of about two millimeters. The removal of the rim of cartilage was prompted by its sharpness and the fact that it felt rough and was tender beyond the limit of the nodule. A cure was apparently obtained. Ten years later, however, tenderness developed posterior to and below the former scar. More of the edge of the cartilage was trimmed off, with resultant freedom from discomfort. There was nothing in the history of this case pointing to the cause of the disturbance.

CASE 2.—J. P., male, forty-two, physician, had for about a year a painful nodular keratotic-topped lesion on the antihelix of the right ear near its bifurcation. It was fairly circular at its base with a diameter of about five millimeters. The lesion was curetted, trichloroacetic acid was applied to the base and it was subsequently irradiated with radium. The wound healed, but the pain and tenderness persisted. Not until a further more radical removal of the scar area, with curettage of the underlying cartilage, did the tenderness disappear.

In this instance the antihelix projected markedly outward beyond the border of the helix, and the painful nodule included the most prominent point. The patient was a sound sleeper and, for as long as he could remember, it had been his habit to sleep on his right side with the affected ear pressed closely to the pillow. His attention was first drawn to the condition by the tenderness.

* Read before the Dermatology and Syphilology Section of the California Medical Association at the Fifty-Eighth Annual Session, May 6-9, 1929.

* A statistical analysis of the twenty-six cases of this article will be appended to the author's reprints.

CASE 3.—W. B., male, sixty, merchant, had a painful nodule of the right ear on the helix anterior to Darwin's point which he thought was caused by a puncture made several months previously to obtain blood for examination. The nodule gave rise to the usual discomfort from lying on a pillow. The patient had serious cardiac trouble with marked circulatory disturbances.

The nodule was reamed out with scissors, the edge of cartilage was trimmed off and the edges of the wound were pulled together with narrow adhesive plaster strips; boric acid powder dressing was applied. Apparently a cure was complete, and there has not been a recurrence.

CASE 4.—J. M., male, sixty-five, physician, had a small keratosis on the top of a small painful nodule situated on the helix of the left ear in the usual location. The nodule was curetted and the base was cauterized with trichloroacetic acid, after which radium was applied. There were four recurrences, three of which were similarly treated with only temporary relief. After removing the cartilaginous edge there was an apparent cure.

There was no clear history of the time of beginning or of the possible causation in this case.

CASE 5.—C. P., male, seventy, retired business man, had a painful nodule on the helix of the left auricle near the tip which had appeared about one month before. It was curetted and cauterized, then irradiated with radium. It was a success for the three years that it was possible to follow the case.

There was no history of possible causative factors.

CASE 6.—B. R., male, only twenty years old, began two years previously to develop painful nodules on both ears. He had, when I saw him, seven such nodules on the right ear, and six on the left. He was not treated. (Figs. 1 and 2.)

He said his ears had been frozen when he was a child. He was subject to chilblains and his ears were deep bluish red.

CASE 7.—J. W., male, fifty-six, railroad employee, came to me because of two painful tender nodules on his left ear, one below and one anterior to a scar over the helix at its upper posterior curve. The scar was the result of excision of a painful nodule one year previously. Both nodules were curetted under novocain anesthesia, the edge of the cartilage beneath each one was trimmed off, and the wound was closed. Healing was uneventful.

There was nothing of interest in the history of this case.

CASE 8.—E. P., male, thirty-six, stockman, had a "pillow" painful nodule of the apex of the helix of the right auricle which had been developing more than a year. The nodule was curetted, the edge of the cartilage underneath was trimmed off, and trichloroacetic acid was applied. The wound healed. Three months later the patient returned, complaining of tenderness anterior to the scar. There was slight crusting over the tender area but no definite nodule. This was similarly treated. Again in three months, then a fourth time after two months, and a fifth time in another two months, he returned, each time with tenderness farther along the edge of the helix anteriorly and below. Altogether nearly three centimeters of the edge of cartilage was trimmed off before all of the tender area was removed.

There was no doubt in this case that the tenderness was in the sharp knifelike edge of the helix of this man's ear.

There was nothing of interest in his history pointing to the development of the original lesion.

CASE 9.—H. W., female, thirty, had for one year a typical painful nodule of the right auricle on the antihelix below its bifurcation. At its top was a small thick circular keratosis about two millimeters in diameter. This was curetted and the base was cauter-

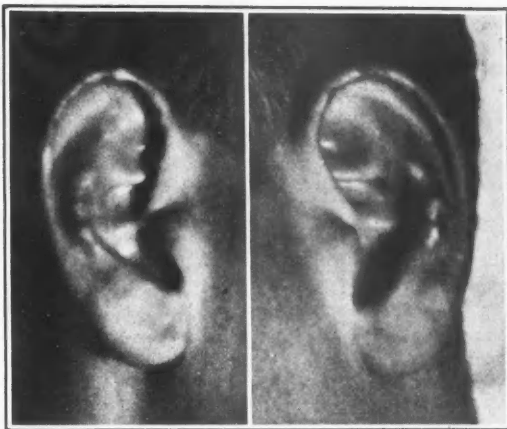


Fig. 1.—Painful nodules on helix and antihelix of right ear. Man twenty years of age.

Fig. 2.—Painful nodules on helix and antihelix of left ear. Man twenty years of age.

ized. One month later, after perfectly smooth healing, the tenderness was still present. The scar area was opened and a circular piece of cartilage about three millimeters in diameter was trimmed out. A month later, because of persistence of tenderness, the procedure was repeated and more of the cartilage was removed. Apparently the third operation was successful, as it has been possible to observe the subsequent result.

In this instance the antihelix was prominent, extending laterally beyond the border of the helix, and the nodule was on the most prominent portion. Close-fitting hats, pulled tightly over the ears, caused marked discomfort. She attributed the lesion to the wearing of a tight-fitting rough straw hat every day for three weeks while traveling in an open automobile one year previously.

CASE 10.—W. B., male, sixty-one, bank employee, had a painful nodule on his left ear, situated in the usual area on the helix, about half a centimeter long. It had been present seven years. There was a history of recurrent crusting. The nodule was topped with a central keratosis. The keratosis covered a small drop-let of yellow pus. Under novocain anesthesia the nodule was slit open along the edge of cartilage. At the base of the pus pocket a small split-pea sized cup-shaped piece of cartilage was found detached from the rim. The helix presented a saw-tooth edge three-quarters of a centimeter in length. This edge was decidedly brittle. About two centimeters of the cartilaginous rim, including the part with the notched edge, was trimmed off with scissors to a depth of about two millimeters. All granulation tissue in the soft parts was curetted, the wound was soaked with alcohol, the edges were pulled together with thin strips of adhesive plaster leaving spaces between, the area was covered with boric acid powder, and a small gauze dressing was applied with adhesive plaster. Within five days healing was complete. This was apparently a success.

No definite history preceding the appearance of the nodule could be obtained.

CASE 11.—C. M., male, about sixty years old, had a painful hyperkeratotic lesion of the right ear in the usual location on the helix. The nodule, which had been present many months, was removed and the edge of the cartilage was trimmed away. Twenty months later the patient again came into the office, this time with a sluggish abscess in the situation of the scar where the cartilage had been removed. This was opened and the pocket, which was filled with creamy-white pus and semisolid necrotic tissue, was emptied. Careful drainage has been continued for

weeks without lessening of the daily discharge. This patient has been under observation nearly six months, during which time there has been progressive loss of cartilaginous substance, giving a noticeable flattening of the upper curved portion of the auricle. He presents a problem which has not yet been solved. The radiographer, pathologist, and bacteriologist have been unable to give any definite aid. The *Staphylococcus albus* has been found in almost pure culture. Constitutional faults of a tangible character, such as possible specific backing or cardiovascular derangements, are negative. Radical surgery may be the only resort, but even that may be of relative value only, depending upon the extent of ear-shell removed. Every means is being tried to save the upper portion of the ear.

Three cases with typical painful nodules in the common location, No. 12, a man fifty-seven years old, with one on the right ear; No. 13, a woman forty-five years old, with one on the right ear; No. 14, a man sixty-one years old, with one on the right ear, in all of which there was no apparent secondary infection, were treated experimentally. This was to prove to myself that the rim of cartilage was of prime consideration in the matter of successful end-result. Under novocain anesthesia the tissues of the nodules over their edges of cartilage were incised with the scissors, and in each instance, without removing any of the soft tissue, the cartilaginous edge was trimmed off a little more extensively than seemed to be indicated, and the wound was closed. In all three cases this procedure was apparently all that was necessary, as healing followed, tenderness disappeared and the areas assumed normal appearances.

Cases 15 to 26 inclusive presented typical painful nodules with little of special interest. They are considered in the statistical analysis.

Doubtful cases with painful ear lesions that are not included in the list, and some of which date back more than twenty years, must have been examples of painful ear nodes. There were twenty-three of these among our older records.

One record, dated 1910, of a man fifty-four years old, a physician, had these notes: "A keratosis on the rim of the left ear-shell that has been present several months. It pains when he lies on it. Lesion curetted and trichloracetic acid applied to base. There is venous stasis of the edge of the earshell so intense as to simulate a Reynaud."

On a record, dated 1906, of a man fifty-three years old, are these notes: "Lesion began two months ago on the margin of the top of the right earshell. It is now a small bean-sized growth, constricted at the base, with rounded sides, and it has a crusted top. It might readily be mistaken for a molluscum contagiosum. On curetting, the lesion proved to be much deeper than I anticipated."

Such records were found among those classified originally under "senile keratoses," later with an omission of the word "senile" for obvious reasons.

SUMMARY OF REPORT

Location of Lesions.—Of the twenty-six patients affected the location was at or near the upper posterior curve of the helix (Darwin's point) in by far the greater number. There were twenty-one who had a single painful nodule in this location. One had a nodule on each ear. One presented two nodules separated by a scar. One other had multiple nodules on both ears. There were sixteen instances in which the right helix was involved and ten with the left. The antihelix was affected four times, singly on the right ear in two instances, and the patient with multiple nodules had them on the helix and antihelix of both right and left ears.

Instances in Women.—The rarity of women patients with painful ear nodules may be only of

passing interest. I have seen three. Would the factor of lessened exposure be brought to mind, and may not this accentuate exposure in the male to rougher elements and to rougher handling? I have thought that possibly a woman's ears are more protected because of the heavier mass of hair. Having the rarity of this condition in women in mind I have sought for other reasons. By comparison women's ears seem to have more subcutaneous tissue over the ridges than is usually found in men's ears, and men's ears seem to have more prominent Darwin points.

Etiologic Factors.—This brings up the question of likely etiologic factors. It is surprising what a small proportion of the cases give any tangible or even conjectural history preceding the occurrence of the nodes, and this in spite of the fact that a patient usually feels quite positive he knows the underlying cause of every swelling or growth.

The location of the node on the most exposed part of the auricle points definitely to irritation as a factor to be considered. And perhaps the commonest and most frequently repeated irritation is that of the pressure of the ear upon the pillow in sleeping. Unfortunately it was determined in only a few instances whether or not the habit of the patient had been to lie on the affected side. A woman's mass of hair may prevent much of the close pressure of the ear against the pillow that a man's closely cut hair does not. Long-continued pressure of the ear against the pillow for hours at a time while the patient is sleeping must in many instances interfere with free circulation of the most exposed area, and so deprive the subjacent cartilage of its nourishment. Now that most women have short hair we may see more frequent instances of painful ear nodes among them. However, even now they wear much more hair than do middle-aged men. It would be unfair to refer to the tight ear-pinching headgear commonly worn by women as an etiologic factor, though it was unquestionably an exciting cause of pain in one instance here reported. Previous freezing of the ears in which chronic circulatory deficiency results is no doubt important, and the auricle, which at best is subject to insufficient nutrition, becomes more faulty in later years, especially when cardiovascular pathology has begun.

It seems to me that circulatory faults in the soft tissues over the helix and antihelix and in the subjacent perichondrium must be of paramount importance in producing an impoverished cartilaginous rim. Roxburgh has given an excellent description of the cartilage pathology.⁹ In Case 10 the cartilaginous changes had progressed to the extent of causing the separation of a small piece of cartilage and definite degeneration of the approximating rim, giving it a saw-toothed appearance. Secondary infection was a factor in this case, but probably not the sole cause of the degeneration.

It is perfectly consistent that recurrences should take place in those instances in which all of the faulty cartilaginous rim is not removed, and it is difficult to determine just how much should be

removed. Also recurrences should be the rule in those patients in whom the same circulatory faults continue or are continually produced. I have gained the impression that most of the patients I have seen have a fairly definite realization of the possibility of a recurrence. They certainly have not been a fault-finding group.

The young chap who had two painful ears, with seven tender nodules on the right ear and six on the left, as shown in the photographs, gave a positive history of having had his ears frozen. He also was subject to pernio of the ears, and when I saw him he had congested bluish red ears. The history he gave was worthy of note as all the occurrences were fresh in his memory. (See Fig. 1 and Fig. 2.)

Some question might arise as to whether or not the nodules in this patient were of the same histologic structure as others reported. No positive proof can be offered as the patient was not treated. The condition was unique in my experience. None of the nodules resembled topi and the patient was only eighteen years old when they began. Keratotic thickening of the epithelium had begun to form on the tops of some of them, not on all. The tenderness to pressure was marked. Each individual nodule fitted well into the picture presented by other instances at some stage while under observation. I had not any doubt that the nodules were clinical examples of chondrodermatitis nodularis chronica helices. In fact this case seemed to strongly indicate the primary development as occurring in the cartilage.

Treatment.—The character of the nodule in the individual case governs the treatment very largely. The important consideration is as to how best to remove all of the pathologic tissue. Whatever method accomplishes this will prove temporarily successful. It is not difficult to work under novocain anesthesia. All the chronic inflammatory soft tissue process can be easily removed by curetting, if so indicated, or by cutting it away with sharp pointed scissors. The rim of cartilage or area of cartilage underneath should be carefully trimmed away, guessing to the best of one's ability as to what extent. If the wound is cauterized it should be permitted to heal by granulation. No doubt in some instances cauterization is best. I have found it advisable in most of the later cases not to cauterize the wound but to soak it with alcohol and then pull the edges together with fine strips of zinc oxid adhesive plaster, leaving spaces between the strips. Stitching might easily irritate the already faulty area. The whole area can be covered with boric acid powder, and a small gauze dressing fastened on with adhesive plaster. Usually healing is uneventful.

CONCLUSIONS

The painful ear nodule is a distinctive dermatological entity. Pain on pressure is the dominant symptom. The nodule consists of chronic inflammatory changes in the soft tissues.

Frequency.—It must be a much more frequent occurrence than one would judge by the number of reported cases.

History.—The history of the beginning of the lesion is characterized by its indefiniteness. All positive information gained, points to circulatory faults.

Age.—The only significance age has, and it is none the less important, is that the development is at the time of life one would expect degeneration to manifest itself. Only four of the patients were under forty, and there was a fairly even division in the grouping into the fifth, sixth, and seven decades.

Sex.—Evidently not many women have painful ear nodules. There were twenty-three men and only three women in the list of twenty-six. And in the list of case records not used, but which were probably instances of painful ear nodules, there were no women. This would indicate a still greater preponderance among men. A woman may be protected by her mass of hair acting as a cushion about the ears, and possibly by having less prominent Darwinian points and greater padding of soft tissue over the edges of cartilage.

Etiology.—Tangible factors would seem to point to circulatory deficiencies in the immediate locality of the painful nodule. The most common disturbance results from pressure of the auricle upon the pillow in sleeping. The gradual development which takes place over a long time would account for the paucity of the history obtained in instances due to that cause.

Essential Change.—The essential change in the painful ear nodule insofar as treatment is concerned must be the pathologic change that has taken place in the cartilage. This change is quite constant in its location in the most exposed and least well-nourished portion of the auricle, most commonly the edge of the helix at Darwin's point, but also of the antihelix when most exposed to pressure. Over this is formed the nodule of inflammatory soft tissue, with keratotic changes in the epithelium at the top.

Relationship of Time of Disturbance in Soft Tissues and Cartilage.—This point is difficult to determine. The persistence of the tenderness over the cartilaginous structure, even after the affected soft tissue is removed and healing has taken place, would seem to point to the possibility of degeneration of cartilage first. This faulty rim or area of cartilage may act much as would a foreign body or as a sequestrum of bone acts in its irritation of the soft tissues in contact with it. Infective microorganisms must play a purely secondary rôle.

Possibility of Failure in Treatment.—One cannot foretell this possibility of failure. The very nature of the etiologic faults would presuppose such a possibility.

Recurrence.—Recurrence does not always mean faulty treatment or faulty judgment, I hope. We are dealing with a condition which, like a headache, may be a "comeback" under similar circumstances.

Possibility of Epitheliomatous Changes.—There was not a single instance of epitheliomatous degeneration in the list of twenty-six. In most of the cases the patients sought relief fairly early.

However, there were some of extended duration without such an eventuation.

323 Geary Street.

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DISCUSSION

LAURENCE R. TAUSSIG, M. D. (384 Post Street, San Francisco).—Painful ear nodules are not rare, and it is important to recognize them in order to institute effective treatment. Probably the most striking clinical feature aside from their location is the marked tenderness. I believe that the most important factor in their development is pressure very likely associated, as Culver has pointed out, with circulatory disturbance. Apparently in each case there is a piece of loose cartilage acting as a sequestrum and as such causing the irritation. The failure to find and remove this sequestrum is, in my opinion, the reason for not obtaining a cure. The method of treatment is immaterial. Sharp dissection, curetting with or without subsequent cauterization, cautery excision, or electrothermic methods are all satisfactory providing the sequestrum is removed.

SAMUEL AYRES JR., M. D. (517 Westlake Professional Building, Los Angeles).—There is very little to add to Doctor Culver's clean-cut analysis of this not uncommon malady. I have had one instance in a woman in whom the condition was first noted following the wearing of a close-fitting hat.

In the matter of treatment I have had success with carbon dioxid freezing, and more recently with diathermic coagulation under novocain. I have not been aware of recurrences with these methods.

H. J. TEMPLETON, M. D. (3115 Webster Street, Oakland).—I have one female patient suffering from painful ear nodule. She is twenty-seven years old and works as a mannequin trying on modern tight-fitting hats all day long.

It is my opinion that in her particular case trauma has been the etiologic factor. I have treated all of my cases by rather wide excision with the actual cautery.

The point that Doctor Culver makes in regard to there being a cartilaginous sequestrum present which must be removed is of great practical interest.

DOCTOR CULVER (Closing).—I wish to thank the men who have discussed my paper.

There is one point that would seem to bear a closing remark even though it may be considered a repetition. The faulty cartilaginous edge is not necessarily free, and it may not give any evidence when it is laid bare that it is pathologic. One has to take it for granted that it is so and use his best judgment as to how much of it should be removed.

Since reading the paper I have seen a boy twelve years of age with a painful nodule of three years' duration on the right ear in the usual location, typical even to the hyperkeratotic top. One was developing also on the left ear, still presenting a smooth surface, and only slightly tender. There was an absence of any history of trauma. Trauma does not seem to be a necessary factor in its causation.

THE LURE OF MEDICAL HISTORY

AN OLD BOOK BY BENJAMIN RUSH

By GILBERT R. OWEN, M. D.
Los Angeles

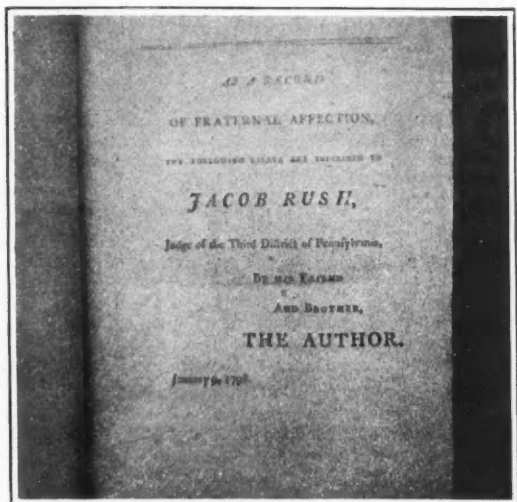
OF Benjamin Rush much has been written, and, as a signer of the Declaration, he is probably one of the best known among American physicians. Historically, how little a century means; yet who among us would appreciate his pre-Pasteurian titles of the "American Sydenham" or the "Pennsylvania Hippocrates."

The book of which we write is a delightful little volume bound in the conventional calf of the period, and from the press of Thomas and Samuel, descendants of the famous William Bradford, who opened the first American press; and the little volume is our excuse for these sketchy comments on Benjamin Rush.

"Essays—Literary, Moral and Philosophical" is the rather depressing title of the volume. It is charmingly and quaintly dedicated: "As a record of fraternal affection, the following essays are inscribed to Jacob Rush, Judge of the Third District of Pennsylvania, by his friend and brother, the author. January 9, 1798." The essays embodied are of the most protean character, and are a fair index of the feeling of civic responsibility common among prominent physicians in Colonial days. Most of the essays had appeared in the *Columbian Magazine*. They won for him caustic comment from Holmes. Garrison terms him "A typical eighteenth century theorist, and a man whose social propagandism against war, slavery, alcoholism, and the death penalty was perhaps not entirely dissociated from a personal interest in increasing his practice."

As a "cure" for the tobacco habit may be read the opening paragraph of "Observations Upon the Influence of the Habitual Use of Tobacco Upon Health, Morals and Property." It is reminiscent of the pictures of the alcoholically induced, hob-nail-liver which were in the textbooks of our youth. We are sure that no nicotine addict will care to continue the regrettable habit after having read it: "Were it possible for a being who had resided upon our globe to visit the inhabitants of a planet where reason governed, and to tell them that a vile weed was in general use among the inhabitants of the globe it had left which afforded no nourishment—that this weed was cultivated with immense care, that it was an important article of commerce, that the want of it produced real misery, that its taste was extremely nauseous, that it was unfriendly to health and morals, and that its use was attended with considerable loss of time and property, the account would be thought incredible, and the author of it would probably be excluded from society for relating a story of so improbable a nature. In no one view is it possible to contemplate the creature man in a more absurd and ridiculous light than in his attachment to Tobacco."

There are some amusing highlights in his homily, a sprinkling of wisdom; but nothing of therapeutic value. Let us read as we run.



Facsimile of title page.

"... the progress in the decay of the sensibility of the nose to the stimulus of snuff is analogous to the decay of the sensibility of the stomach, to the stimulus of spirituous liquors. It feels for awhile the action of Rappee; next it requires Scotch snuff, afterward Irish Black-guard—and finally it is affected only by a composition of tobacco and ground glass. This mixture is to the nose what cayenne pepper and Jamaica spirits are to the stomachs of habitual dram drinkers."

"A citizen of Philadelphia lost all of his teeth by drawing the hot smoke of Tobacco into his mouth by means of a short pipe. . . . I once lost a young man of 17 years of age, of a pulmonary consumption, whose disorder was brought on by the intemperate use of segars."

He denies the virtue of tobacco as a preservative against contagion, a lay superstition that exists even to this day. Recent excavations of old plague burial pits in London disclosed great quantities of clay pipes used by the "buriers of the dead" for this purpose.

"Colonel Burr informed me that the greatest complaints of dissatisfaction and suffering that he heard among the soldiers that accompanied General Arnold in his march from Boston to Québec through the wilderness in the year 1775 were from the want of Tobacco. This was the more remarkable, as they were so destitute of provisions as to be obliged to kill and eat their dogs."

"It has been further said that chewing and smoking Tobacco assist in the intellectual operations. . . . Mr. Pope recommends a trotting horse for the same purpose." (His only flash of wit. Probably inadvertent!) . . . "I suspect that Tobacco is often used rather to supply the want of ideas than to collect or excite them."

In review . . . "we are assured that nothing exists in vain. Poison is a relative term. . . . What animal except man will take Tobacco into its mouth? Horses, cows, sheep, cats, dogs, and even hogs refuse to take it. . . . Modern travel-

lers have at last discovered that it constitutes the food of a solitary and filthy wild beast, well known in the deserts of Africa, by the name of Rock Goat."

The "Remarkable Circumstances in the Constitution and Life of Ann Woods," together with the "Life of Edward Drinker," seems to have much to do with his essay on "Old Age," which had previously appeared in his *Inquiries*, Vol. 2. There were still murmurings of witches in Salem, even as today they are still "hexing" in Pennsylvania. The memory of Nicholas Culpeper was yet fresh, if not fragrant. Laennec's holly wands were known as "papist contrivances." Belief in the supernatural and the extraordinary, tinted Rush's environment. One swallow made many a summer, and Ann's biological eccentricities, doubtless apochryphal, became physiological realities.

Ann's history runs thus: She first menstruated at the age of 19 or 20. Having lost three children soon after weaning she suckled subsequent children, six in number, throughout entire pregnancies, suckling one until its fifth year. She had a child by her second husband in her sixtieth year. Except for eleven-month intermissions during her pregnancies, she menstruated until her eightieth year, suffering subsequently headaches because of her senescent menopause. She was, at the time Rush met her, he states in the "Old Age" essay, in her one hundredth year. In the "Ann Woods" essay, her ninety-sixth.

From Ann's testimony he reaches the following conclusions: "That there is a great latitude in the time when the menses cease. It is more common for them, in their eccentricities, to disappear at the usual time and to return in extreme old age." "There is a great latitude in the time in which women bear children. Many children are born between 50 and 60, but very few, I believe, beyond sixty." "That child-bearing and suckling children, . . . gray hair in the fifth decade," and "hard work combined with temperate habits, . . . do not materially affect longevity. . . ."

Many of his observations on old age are startlingly modern. In his "Eulogium" on Dr. William Cullen, whom he appears to have revered above all men, he says: "I have been informed that he yielded at last to the passion for rural improvement, which is common to all men, and amused himself in the evening of his life by cultivating a farm."

Warthin, on the same subject, in his Carpenter lecture, delivered to the New York Academy of Medicine in 1928, says: "Creative mechanical work of some kind offers one of the best outlets to the old man's restlessness; and of all the occupations that may offer, that of gardening, of growing and planting . . . is the very best form of exercise and avocation adapted to the needs of the aged individual. There is also a very definite psychological relationship shown in the return of the old man to the soil."

In his "Life and Death of Edward Drinker," Rush writes: "But it is a fact well worth attending to, that old age, instead of diminishing, always increases the desire for knowledge. It must add some consolation to those who expect to be old

to discover that the infirmities to which the decays of nature expose the human body are rendered more tolerable by the enjoyments that are to be derived from the appetite for sensual and intellectual food." Warthin again says: "Since the mental powers are preserved longer than any other function in senescence, happy is that man who comes into his old age with the capacity for intellectual pleasures fully developed, not in one line alone, but in many—in literature, art, music, and science."

Rush says: "Few persons appear to die of old age. Some one of the diseases which have been mentioned generally cuts the last thread of life." Warthin's monograph states: "Such a biological normal death is rarely achieved by man. He usually succumbs to influences of environment, or dies prematurely because of inherent defects in his organism."

1800 West Sixth Street.

CLINICAL NOTES AND CASE REPORTS

CONGENITAL CYSTIC DISEASE OF THE LUNG*

REPORT OF CASE

By RULON S. TILLOTSON, M. D.
Woodland

WITH very few exceptions the only cases of congenital cystic disease of the lung that have been reported have been found at autopsy or following a surgical operation on the lung. For this reason, I feel somewhat hesitant in reporting this particular case which was found in an apparently healthy individual. However, the evidence shown in the case presented seems to justify the diagnosis.

The first clinical report on congenital cystic disease of the lung was made in 1859 by Meyer¹ in Germany. Krontz,² from the pathological department of Johns Hopkins University, reported a case of this disease in 1925. In reviewing the literature to that time he found no American cases had been reported. The latter author collected 108 cases, most of them reported by the Germans, some by the English, French, and Italians. Miller³ in Baltimore, in 1925, and Eloesser⁴ in San Francisco, in 1928, have reported cases of this disease.

In the series of 108 cases reviewed by Krontz the age at which these cases were found at autopsy extended from premature stillborn infants to old age. The condition was apparently not a direct or a contributing cause of death in many of the cases reviewed. In six cases it was but an accidental finding at autopsy. An Associated tuberculosis was reported in but five of the total number of cases.

In discussing the confusion in the terminology on the literature on this condition, Krontz states: "The following terms are encountered and used synonymously: fetal bronchiectasis; congenital

cyst formation of the lung; atelectatic bronchiectasis; congenital bronchiectasis; honeycomb lung; and others."

REPORT OF CASE

P. M., age twenty, referred to San Francisco Hospital by an outside physician, with a diagnosis of pulmonary tuberculosis. Admitted on the service of Dr. W. R. P. Clark, April 15, 1929.

Present Illness.—One week preceding admission the patient first noticed a dry cough, not frequent, principally nocturnal. Four days preceding admission, during a mild spell of coughing, he brought up about a tablespoonful of bright liquid blood. There was no recurrence of the hemoptysis up to the time of his admission.

Family History.—No family history or association with tuberculosis. Father and mother are living and well. Two brothers and one sister are living and well; none are dead.

Past Medical History.—Born in Italy, came to this country at nine years of age. Shortly following his arrival in the United States he had chickenpox; made good recovery. With the exception of this one childhood disease, he never remembers being ill. Was never told by his parents of any illness he suffered during infancy or early childhood. No history of repeated head colds or chronic nasal discharge. He has never had a cough except as referred to in present illness, no sputum, no night sweats. There is no past medical history referable to cardiovascular, gastrointestinal, or genito-urinary systems. No history of venereal infection. No history of foreign body aspiration.

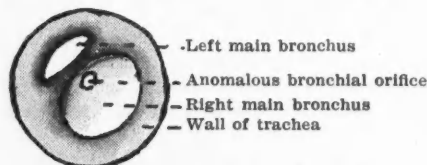


Fig. 1.—Diagram of region of bifurcation of trachea, as seen through the bronchoscope.

He has been employed as a boxmaker the past four years and has always been able to do hard work. His general health was considered very good until he spat up the blood four days prior to admission. Six months ago, while stripped to the waist for a friendly boxing encounter, he noticed for the first time that the left side of his chest was smaller than the right. Enjoys boxing and engages in this sport occasionally.

Physical Examination.—The following physical findings are mentioned among others by Doctor Clark:

"Patient appears somewhat undernourished. The left shoulder is lower than the right and there is definite flattening of the trapezius muscle on this side. There is a left scoliosis of the spine. The finger nails are curved but the fingers are not clubbed. The respiratory movements are restricted on the left. The heart is markedly displaced to the left. The right border of the heart is to the left of the sternum. The percussion note is slightly impaired in the upper portion of the left lung and merges into the area of cardiac dullness below. There is more or less dullness over left lung posteriorly. Tactile fremitus is present over both sides, is increased at left top and decidedly diminished at left base. No cardiac murmurs are heard." Examination of the head, including the sinuses, was negative. The abdomen and extremities were negative. Sputum examination negative for tubercle bacillus on three examinations. Request was made that further examinations be made. Urine negative. Blood Wassermann negative. Temperature normal.

X-Ray Examination.—An x-ray of the chest was taken April 17, 1929 (Fig. 1). The following report was made by Dr. John M. Rehfish:

"The left chest is much contracted in all its diameters. The mediastinum has been badly displaced to-

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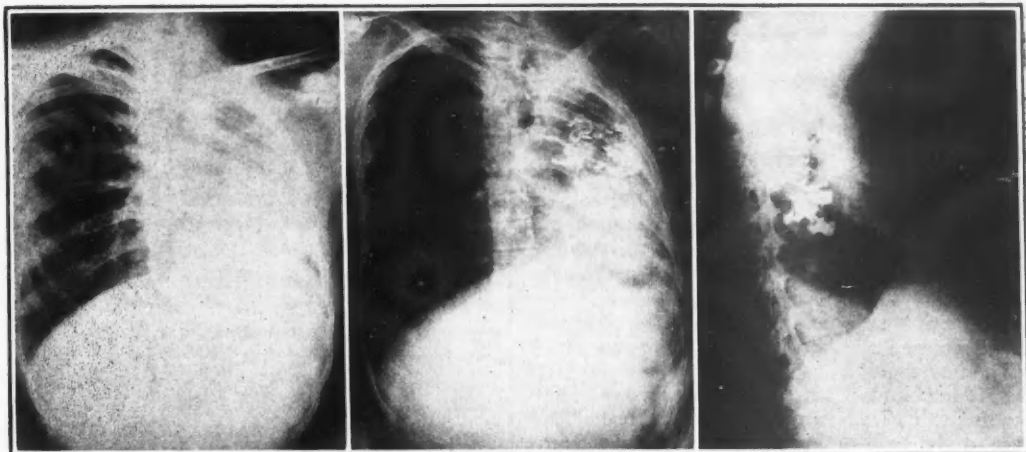


Fig. 2.—Film taken April 17, 1929, shows complete atelectasis of left lung, trachea is pulled to the left, heart and mediastinum are markedly displaced to left.

Fig. 3.—Film taken May 21, 1929, following bronchoscopy and lipiodol injection shows cystic dilatation of bronchi in left atelectatic lung.

Fig. 4.—Film taken May 21, 1929, shows cystic dilatation of bronchi in lateral view.

ward the left. The lung field on the left is quite diffusely opaque with no parenchymatous detail to be made out. The right border of the heart lies to the left of the left border of the vertebral column. The right lung field presents no definite evidence of pathology and the hilum of the right lung has completely disappeared behind the vertebral column. This is, of course, a most unusual picture and while a fibrosis may account for similar findings, this would be unusual in a patient at this age without involvement of the opposite side. All in all, the x-ray would seem to justify a diagnosis of bronchial stenosis with complete atelectasis of the left lung."

The following comment was made by Dr. Charles D. Fletcher:

"The x-ray shows a complete atelectasis of the left lung field which may be due either to an intense fibrosis or a bronchial stenosis. The absence of pathology on the right makes one feel that it is not tuberculosis because of the marked involvement of the left side. There is no history of repeated attacks of pneumonia to warrant the diagnosis of chronic pneumonitis (Corrigan's sclerosis). A congenital atelectasis or bronchial stenosis are also possibilities. Bronchoscopic examination is suggested."

Bronchoscopic Examination.—A bronchoscopy was not arranged until the following month.

On May 21, 1929, I bronchoscoped the patient with the assistance of Dr. J. L. Ash. The bronchoscope was passed without difficulty. The tracheal rings were identified, the mucosa was of normal appearance. No free secretion was encountered on passing the bronchoscope to the carina or septum between the two main bronchi. The carina, instead of occupying the normal anteroposterior position (vertical in appearance, as viewed through bronchoscope with patient lying on back), occupied an oblique position, as shown in Fig. 2. The relative diameter of the upper or left main bronchial orifice was much smaller than that of the right and presented in its upper portion a slightly granular appearance, not reddened or bleeding on touching as would suggest true granulation tissue. The orifice of the left main bronchus was too small to admit the tip of the seven millimeter bronchoscope. No free secretion was noted coming from this orifice. On passing the bronchoscope along the right main bronchus a small, apparently anomalous, bronchial orifice was noted in its left lateral wall at less than one centimeter from the carina. On subsequent lipiodol injection this appeared from the x-ray film to communicate with the left main bronchus. The upper lobe bronchial orifice on the right and the

orifices of the middle and lower lobe bronchi on the right were identified and appeared normal. No free secretion was encountered in the right main bronchus. No granulations or ulcerations of the mucosa were noted. A No. 12 rubber catheter was introduced through the bronchoscope to the left main bronchus after which the bronchoscope was withdrawn and the catheter left in situ. The patient was moved to the fluoroscopic room and lipiodol was introduced through the catheter with a Luer syringe, the distribution of the oil being observed under the fluoroscope. X-ray plates, taken immediately following in the anteroposterior and lateral planes, are shown in Figs. 3 and 4."

The following report on the x-ray plates was given by Doctor Rehfish:

"There is a very satisfactory lipiodol injection of the posterior portion of the collapsed left lung. The lipiodol is gathered in small puddle-like masses demonstrating the presence of a grapelike cluster of bronchial dilatations. In view of the total absence of clinical evidence pointing toward true bronchiectasis, the possibility of a cystic dilation of the bronchi must be strongly considered."

On June 8, 1929, bronchoscopy was repeated. The appearance of the tracheobronchial tree, open to inspection through the bronchoscope, was the same as at examination May 21, 1929, with the exception of the fact that the granular contour of the upper portion of the left main bronchial orifice was not noted in this examination. Bismuth subcarbonate was insufflated through the bronchoscope with a Clerf bronchoscopic atomizer in the region of the carina and left main bronchus. An x-ray of the chest was taken immediately following in an effort to better demonstrate the anomaly of structures in this neighborhood. The absence of contrast in the shadow cast by the bismuth and the marked cloudiness of the diseased left lung prevented any satisfactory conclusion being drawn from the x-ray plate.

COMMENT

The anomaly in size and arrangement of the bronchial orifices on the left (open to inspection through the bronchoscope) is suggestive of a congenital rather than an acquired lesion. The absence of secretion on bronchoscopic examination and the negative history of expectoration of secretion are against an acquired bronchiectasis. The absolutely negative history of diseases usually

elicited in the past medical history of acquired bronchiectasis cases is against the acquired form of this disease.

The term "cystic disease of the lung" may be objected to on the basis of the fact that the dilated bronchi in this case appear to be air-containing rather than filled with fluid or semi-solid material which the term "cystic" may imply. To those objecting to the term "congenital cystic" disease of the lung in this case the synonyms atelectatic bronchiectasis or congenital bronchiectasis may seem to better describe the pathologic process.

At this time two months have elapsed since the patient entered the hospital. He states he feels well and as strong as usual. His admission weight was 124 pounds; his present weight is 130 pounds, which he regards as normal. He had no fever at the time of his admission and has been fever free since. The slight cough which he had on admission cleared up shortly after his entrance to the hospital. There has been no hemoptysis since the attack described in his present illness.

Reference to the fact that he enjoys boxing and frequently engages in this sport has been made in the history. Could trauma of the chest, such as might result from engaging in this sport, have contributed to the hemoptysis in the presence of such an underlying condition of the lung? No direct history of a traumatic basis for the hemoptysis could be obtained. It is believed that the evidence presented in this case is sufficient to warrant the diagnosis of congenital cystic disease of the lung.

San Francisco Hospital.

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A CLOSED METHOD FOR DRAINING ACUTE EMPYEMA

By J. E. STRODE, M. D.
Honolulu, T. H.

NO priority whatever is claimed for the following method of treating empyema. The originator of the method is not known to me nor have I been able to find a description of this technique in available literature. It was used during the recent war and proved so efficient at that time, and since, in civilian practice that a more widespread dissemination of its use would seem advisable.

Under intercostal block anesthesia one inch of the ninth rib in the postaxillary line is resected. With the index finger inserted into the pleural cavity as a guide, a trocar large enough to admit a No. 16 F. catheter is introduced through the intercostal space that lies in closest proximity to

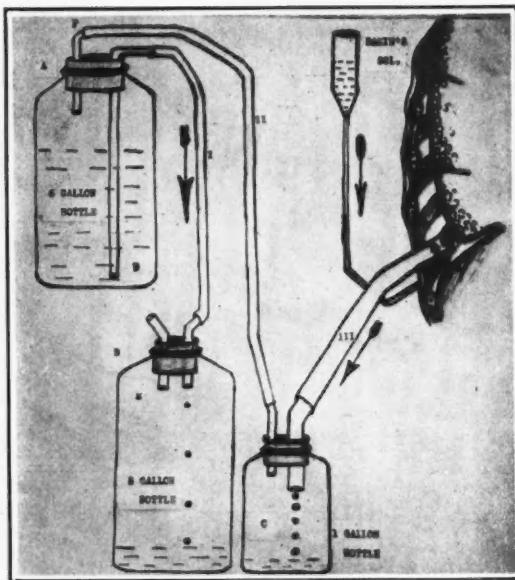


Fig. 1.—Diagram of apparatus used.

the upper surface of the diaphragm. The catheter is threaded into the pleural cavity and held in place by a single silkworm gut suture after removing the trocar. A firm rubber tube with a diameter of ten millimeters is retained in the primary thoracotomy opening by two silkworm gut sutures. Connections are then made, as shown in the diagram. (See Fig. 1.)

To start the apparatus to functioning, one blows into the glass tubing F until water begins to siphon from bottle A to bottle B. The attachment is then replaced. As water flows from bottle A to B negative pressure is produced in bottle A which is transmitted to the pleural space via bottle C and tubing III. This sucks out the pleural exudate which collects in bottle C, at the same time keeping the lung expanded.

Irrigation with Dakin's solution, either continuously or preferably at four to eight-hour intervals, is carried out by way of the catheter.

When the water in bottle A has been nearly exhausted a clamp is placed on tubings I and II, the stoppers withdrawn, and bottles A and B exchanged. To cleanse bottle C, clamp tubings II and III.

The amount of negative pressure obtained will vary in proportion to the distance the end of tubing D is above the end of tubing E and to a less extent on the height of the water level in bottle A. For all practical purposes if the distance between the bottom of bottles A and B is kept at eighteen inches sufficient negative pressure will be obtained and will be in the neighborhood of twenty millimeters of mercury.

Needless to say the success of the apparatus depends upon keeping the system relatively airtight. A small amount of sterile gauze is placed over the incision and the area sealed over with

several layers of adhesive plaster. When working efficiently the rate of flow into bottle B will be from thirty to fifty drops per minute.

There is no age limit to the applicability of the method, though babies and children require more surveillance. Where this method of treatment has been instituted at the proper period the average length of time necessary for its employment has been two weeks. After removing the tubes the incision soon heals and x-rays show little, if any, lung collapse.

With this method, by which a considerable amount of negative pressure is continuously exerted on the lung, there is a greater likelihood of the lung expanding where there has been thickening of the visceral pleura than when simple air-tight drainage is used.

I also feel there is a distinct advantage over the introduction of intercostal drains, as the possibility of compression of the tube and lessening of its caliber between the ribs is not a factor when a portion of the rib has been resected. The amount of additional shock when local anesthesia is used is almost negligible.

While the apparatus may appear a bit cumbersome, in reality it is simple to assemble, easily procurable, works efficiently, and is comfortable for the patient.

401 South Beretania Street.

TUMORS OF THE CAROTID BODY*

REPORT OF CASE

By W. H. BUDGE, M. D.
Ogden, Utah

THE carotid body is not a new discovery. Its existence has been known since 1743, when von Holler found it and described its relations and macroscopic appearance. In 1862, one hundred and nineteen years later, Luschka noted its constant occurrence and made the first microscopic examination. It appears that Riegner, in 1880, was the first to remove a tumor of this gland. He called attention to the malignant tendency of such growths. Since 1891 up to the present time about one hundred cases have been reported by different surgeons, but not more than three have been reported by any one surgeon. In spite of the number of cases reported the clinical symptomatology, the etiology, and histologic characteristics are still more or less obscure.

THE CAROTID BODY

Nomenclature.—The exact nature of the gland or organ under discussion has been so uncertain that several different names have been given it, such as: intercarotid ganglion, Luschka's gland, intercarotid arterial glomerulus, carotid ganglion, and carotid body.

Anatomy.—When von Holler stated over one hundred and eighty years ago that he found a nodule about the size of a kernel of wheat at the

bifurcation of the common carotid artery, that it was set in the sympathetic nerve plexus around the artery and almost fused with its wall, and called it the intercarotid ganglion because he regarded it as a nerve structure. He little knew that at the present time his views, with a few modifications, would be confirmed.

Luschka's microscopic findings also have been substantiated of large cells in clusters surrounded by thin capillaries and sympathetic nerve fibers, which suggested to him their analogy to the adrenal bodies, the anterior lobe of the pituitary and other ductless glands. There has been, however, some disagreement among modern histologists in regard to the character of the cells and blood vessels, and the question of their close relationship with the nerve fibers.

The blood is supplied by three or four small arteries that enter at its lower pole. A corresponding number of veins leave at its upper pole. Its nerves are numerous and come from several sources among which are: the vagus, sympathetic, hypoglossal, and the glossopharyngeal.

Histology.—Dr. James Dawson reports the sections show irregularly arranged clumps and rows of cells occupying the interspaces within a close capillary network. The cells are fairly granular and when treated with chromic acid take the yellow color of "chromaffin" cells. The specific cells and endothelium probably share in the tumor process.

Physiology.—The function of the carotid body is not known. Experimentally its juice has been known to kill a rabbit in a few minutes, and small doses will depress the vascular system, which is just the opposite from the action of adrenalin. Bilateral removal of the organ has produced glycosuria and fatal cachexia. Undoubtedly the carotid belongs to the sympathetic ganglia.

Symptoms.—The symptoms are pressure symptoms such as: bruit and thrill, tinnitus aurium, harshness, cough and vocal cord paralysis from involvement of the sympathetics, dysphagia, and dysphonia.

Diagnosis.—The growth is almost always unilateral and occurs with equal frequency on the two sides of the neck and in male and female subjects. The following points are important in diagnosis: position at carotid bifurcation, smooth oval outline, mobility from side to side but not up and down, transmitted pulsations from carotid, slow growth (often many years), absence of any pain or tenderness with bulging of the pharyngeal wall.

The differential diagnosis should include consideration of the possibility of enlarged lymph glands, *i. e.*, cervical adenitis, gland metastasis as in carcinoma, Hodgkin's disease, bronchial cyst, syphilitic enlargement of glands, gummata, tuberculous glands, dermoids, and aneurysm.

Pathology.—Tumors of the carotid may be benign or malignant. The benign tumors are simple hyperplasia, adenoma, and angioma. The malig-

* Read before the Weber County Medical Society, September, 1926.

nant tumors have been variously diagnosed as perithelioma, endothelioma, epithelioma, epithelial angiosarcoma, and carcinoma. These tumors vary in size from an almond to a goose egg, are usually oval in shape, smooth, and occasionally lobulated. They are usually dark red in color on section, but may be almost white or yellow.

Operative Difficulties.—The growth commonly involves both internal and external carotid arteries and frequently the vagus and cervical sympathetic nerves are so intimately bound up in the tumor that they necessarily have to be sacrificed in its removal. In the fifty cases collected by Schmidt, forty-five patients had operations with twenty-eight cures, fourteen deaths, and three recurrences. Both vagus and sympathetic nerves were cut three times, and the vagus alone three times. In most of the patients both carotids were tied, in three patients only the external carotid was tied. Of the fourteen deaths two patients had bronchial pneumonia following section of the vagus, two died of hemorrhage, four had hemiplegia (evidently from tying the internal carotids), one died of sepsis, and five of various other causes.

Results.—The results in the cases operated on up to date have not been very creditable to the surgeon. The mortality is high. Laryngeal and other disturbances of a permanent nature should make one hesitate before operating. Among the serious complications that have resulted are hemiplegia, aphasia, paralysis of the facial and the hypoglossal nerves. If these tumors are to be treated successfully they should be operated on early before they have become so intimately attached to the carotids that ligation of the carotids is necessary for their removal. The surgeon will rarely see them in this state and will still more rarely make a correct diagnosis.

REPORT OF CASE

This patient, E. F. M., age thirty-eight, came to me June 9, 1926, giving a history dating back ten to twelve years. At that time he first noticed a small tumor mass in the left side of his neck. This was accompanied by the following symptoms, which were gradually becoming more pronounced: burning sensation on the left side of the neck, anterior to the ear and involving the side of the jaw, black spots before the eyes, vertigo, slight stiffness of the neck, occasional ringing of the ears, sensation of throbbing especially when he had a cold, and a dull aching. Sharp shooting pains were present during the last month before coming under observation.

The patient was a well-nourished man, weight 190 pounds. Family history negative. Past history and physical examination negative, aside from the tumor mass in the neck. On the left side of the neck, behind and below the angle of the jaw, lying deep in the carotid triangle, was a smooth, hard, nontender and nonfluctuating mass about the size of a hen's egg, movable laterally but not perpendicularly, extending from about the bifurcation of the common carotid artery, well up toward the base of the skull, behind the sternomastoid muscle.

A removal operation was done June 19, 1926. A slightly curved incision was made in the crease of the neck, on the left side overlying the tumor. Superficial tissues were cut through. Much bleeding was

encountered, due to established collateral circulation. The sternomastoid muscle was retracted laterally. The tumor which was in a sheath was then exposed, lying underneath and partly medial to the sternomastoid. It was found to be very hard, adherent, deep red in color, the shape and size of a hen's egg and extending well up toward the base of the skull. The distal end was in the bifurcation of the common carotid artery and the external carotid was seen running over the lateral surface of the tumor. The finger was introduced under the proximal end of the tumor. This was difficult, due to the close proximity of the tumor and the base of the skull. The tumor was raised slightly and gently while the external carotid was dissected off the external surface with the finger of the other hand. The internal carotid was dissected off likewise and the tumor was completely removed. Considerable hemorrhage occurred from the posterior facial vein, which is a branch of the external jugular, and which was torn off just as the tumor was removed. This was controlled by hot packs and later ligation. After removal the internal and external carotids could be identified and were found to be pulsating normally. No nerves were cut, except superficial branches, all vessels were tied and a narrow iodoform gauze pack was put in. Fine catgut was used for superficial tissues, and silk for the skin. The pack was removed the following day.

Pathologic Report.—Made by Dr. E. C. Barrett, pathologist to the Thomas D. Dee Memorial Hospital: Small hen's egg sized tumor mass which histologically shows that both the specific cells and the endothelium participated in the process, yielding a more or less homogeneous mass involving the entire gland.

The stroma was infiltrated with tumor cells, which are distinctly polyhedral and granular. They are arranged for the most part in compact groups without lumen, supported by abundant capillaries.

There are larger cell groups with a tendency to degeneration and hemorrhage into the central cavity. Occasional knobs of hyaline-like material are seen in the stroma, often bulging into capillaries.

Diagnosis.—Endothelioma of carotid.

Subsequent Course.—The next morning, following the operation, I visited the patient and talked with him. The same afternoon the nurses noticed that he could talk only by whispering. This whispering continued until November 14, 1926, when upon arising he suddenly spoke aloud. He was very surprised and came to my office and talked to me. The following day his voice left; and he continued to whisper until September 7, 1928, when suddenly, while directing some construction work, his voice returned. He reported to me again on October 1, 1928, and his voice was perfectly clear. He speaks with as much ease, in both high and low tones, as any normal individual. At the present time, thirty-two months after operation, the patient is perfectly well and there are no signs of recurrence. This speech impairment undoubtedly was mental.

SUMMARY

1. A new case of carotid gland tumor is reported.
2. The extreme rarity of a tumor of the carotid body is noted.
3. Physical findings in case reported, which were definite, fit in perfectly with those found previously and described by other surgeons having similar cases, but which were unknown to me.
4. Diagnosis was not made before operation.
5. Results: Temporary loss of voice; otherwise patient is well.

309 First National Bank Building.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

OBSCURE GALL-BLADDER DISEASE

STANLEY H. MENTZER, SAN FRANCISCO.—The most important single factor in the diagnosis of obscure gall-bladder disease is the history. Upon it may rest the diagnosis, the proper course of treatment, and the prognosis. It may nullify laboratory data and deny x-ray findings, and it may demand surgery or refuse it when other features of the case seem to warrant otherwise.

There are three main diagnostic features that deserve detailed study in the history of obscure biliary disturbance. Upon them rest the major factors in the differential diagnosis. They are: pain, qualitative food distress, and gas.

The first of these, pain, is often denied by the patient. She will insist she never has any pain. Her trouble is simply "distress," a heavy sensation indefinitely localized in the upper abdomen. It may not radiate nor localize at any time. It does not double her up in agony nor is it usually severe enough to warrant medication for its relief. It is simply a distress of an ill-defined nature. It is related to food, however, and this may be quite characteristic. When there is distress it is present an hour or an hour and a half after certain foods. Occasionally it is relieved by a little additional food, but not with the regularity and definiteness that food affords an ulcer pain. It does not occur with any regularity and, while there may be long periods of relief, there is not the characteristic intermittency of the ulcer syndrome.

The patient often ascribes her distress to some food that probably was not the offender, for she may not have noted any particular kind of food that brings on the trouble. Careful inquiry into the latter, however, will usually reveal a characteristic type of food that is responsible. But this may have been so indefinite that the patient has not been aware of it. Soda is occasionally taken with more or less relief, but never with the regularity or success that the ulcer patient enjoys. The distress is limited, disappearing in the course of an hour or so, or it may occasionally completely vanish after the patient has belched. Atropin in 1/75 grain doses is the best alleviator of it.

The qualitative food distress that these patients suffer is not characteristic. There are usually suggestive features that, when studied in detail, give a clue to the trouble, but the classical distress from eating fats, sweets, and sour food is absent. The interpretation of qualitative food distress is so much abused by the student that it is probable we are often misled by our own histories. The patient who is unable to eat a fried pork chop may say in the next breath that she enjoys fried potatoes without distress, or vice versa. The man

who cannot eat a salad with mayonnaise or Louie dressing is able to handle fresh tomatoes in abundance. Or the woman who cannot tolerate cake or pastry is able to eat candy joyously. These, of course, are not instances of qualitative food distress and yet they are cited as such frequently.

I think it may safely be said that the patient with an early or obscure gall-bladder lesion will complain of one type of food rather than all three. And a carefully taken history will show that this patient is really sensitive to either fats, sweets, or sour foods. She is often able to eat a food that at one time distressed her and now does not, but careful questioning will prove that a large quantity of that food will bring back her trouble. Indeed, this is one of the most characteristic features of early gall-bladder disease. The patient may be able to eat a heterogeneous mixture of many kinds of food, including her regularly "intolerant" food, but this is possible only if small quantities are eaten at a time. It is the large meal or the large quantity of one type of food that induces distress in these patients. How often we hear that the patient can eat a small quantity of fats, sweets or sour foods, but that the trouble follows when quantities of a certain food that are ordinarily normal initiate the distress. And in terms of pathologic physiology, is this not just what we should expect? The slightly diseased gall bladder is able to function partially; it concentrates bile somewhat, and it is able mechanically to empty partially. Why should it not be able to partially handle the burden thrust upon it? But to expect that disabled organ to function as a normal one is unreasonable, is it not? In thinking thus, in terms of pathology, the course to be followed in treatment is obvious. These gall bladders should not be treated surgically. They are partially functioning organs and can do a reasonable amount of work. The task put upon them should be limited, but they should not be completely out of use as either a cholecystostomy or cholecystectomy will do. And this holds true for the partially functioning gall bladder, whether it is full of stones or not. Gall bladders that contain stones yet function partially will invariably be essentially noninflammatory. As secondary infection occurs, clinical symptoms of distress are increased. Surgical treatment may then be considered in the therapy, but it should not be done in the early gall-bladder lesion, for it is surprising what a large percentage of the population pass through life with a gall bladder full of stones that has not given much evidence of its presence. There may be some trouble, of course, but if that distress is not disabling or too severe, is it not better to make the most of it rather than deprive

the patient of the partial use that he is having from it?

The gas that these patients suffer from is quite characteristic. It is not flatulence, though intestinal gases usually accumulate concurrently from the actual indigestion that follows a partially functioning gall bladder. If it is remembered that bile from a diseased gall bladder is less in amount and less concentrated than that from a normal gall bladder, it can be readily appreciated that fats especially can be handled in small amounts only. The more fats, sweets, or sour foods that are eaten at a single time the greater will be the demand for concentrated bile in large quantities for their digestion. The less bile that is available, and particularly the less concentrated bile that is available for digestion, the more intestinal indigestion and gas that will subsequently follow.

The gas these patients complain of is belching. It occurs an hour or more after eating and it is usually belched up in one large amount, with considerable if not complete relief. The belching that many persons have five or ten minutes after eating is not gas from indigestion; it is air that is regurgitated that has been swallowed with food. This, of course, has no relation to gall bladder disease. Yet it is interpreted as belching from indigestion in at least 50 per cent of the referred patients that I see. Certain foods particularly cause gas, even in normal persons. These should not be considered seriously in evaluating the gas our patient may be suffering.

As a general rule, the more obscure the gall-bladder lesion the more care that should be taken in eliciting and evaluating the history, for it is the most important single factor in the diagnosis and prognosis of the case.

* * *

STERLING BUNNELL, SAN FRANCISCO.—That the history is most important in the diagnosis of obscure gall-bladder disease, I can heartily agree. A clear convincing history, even in the absence of gross pathological operative findings, justifies the removal of the gall bladder, as has been repeatedly proved both microscopically and by cure of the patient. I cannot agree, however, that the three main diagnostic features are pain, qualitative food distress, and gas. These can be produced by even pylorospasm alone. Not that the value of studying these three symptoms in a detailed way should not be encouraged, but for a clear workable diagnostic conception, should we not think with a wider and more rational scope? Equally important are such features as local tenderness, the history of bilious attacks when young, the possible etiology such as catarrhal jaundice, typhoid or intestinal infection, the general type of patient, and neurotic tendency, the general toxic symptoms, chilliness, fever, myocarditis, arthritis, the group of reflex symptoms, pylorospasm, nausea, vomiting, splinted respiration, the chronicity of symptoms and, finally, the

deductive reasoning, grouping all of the symptoms in their proper relation and judging the case history as a whole.

What is gall-bladder disease? Stone and infection are quite different and so is aseptic distention of the gall bladder from obstruction such as overacting cystic valve or kink, stone or swelling in the cystic duct, and these conditions act in different ways. What do symptoms mean unless coupled with pathology? So how can it be stated what the symptoms are of obscure gall-bladder disease?

The gall bladder does not cause symptoms from the loss of its function. Fats, sweets, and sour food may alike cause indigestion, though the bile acts only on the fats. The indigestion results from the deranged function of the stomach due to the reflex irritation from the gall bladder, and these foods increase the pylorospasm. The gas complained of is not from the lack of concentrated gall-bladder bile. Gas comes from aërophagia and bacterial and enzyme fermentation of proteins and carbohydrates and not from fats. In gall-bladder irritation hyperreflex action encourages aërophagia, but the feeling of gaseous distention comes much more from pylorospasm and distention and spasm of the gall bladder than from gas itself. That the gall bladder still has partial function is no contraindication to its removal. Its lost functions are readily compensated for by the body. The decision for operation is based instead on the degree of severity of the symptoms. Removal of the infected gall bladder should be done early before infection is established throughout the biliary system and before the stage of dangerous complications has been reached.

* * *

CHARLES T. STURGEON, LOS ANGELES.—In the typical case of gall-bladder disease it is very easy to make a diagnosis, and the treatment at once is apparent. But in the mild or obscure case the diagnosis is not easily made, as frequently all the symptoms are referable to the stomach and not to the gall bladder.

It is in this type of case as Doctor Mentzer mentions in his article that a carefully taken history is by far the most important single factor in making the diagnosis.

The patient will always ascribe the distress or attack to some particular article of food. This particular article of food may change with each attack, but nevertheless the patient is always sure of just what food is responsible.

My experience has been that diet does not help this patient, and that sooner or later he comes to surgery.

It is not the presence of stones so much as the complications of hepatitis and pancreatitis that demands surgical treatment of cholecystitis. These complications may be so slight in mild cases of cholecystitis that they cannot be diagnosed clinically, but if allowed to go untreated for too long

a time very slight benefit can be expected from surgery.

I do not wish to convey the idea that all obscure cases of cholecystitis should be operated on at once. A careful diet as suggested by Doctor Mentzer should be tried. If no relief is obtained from this diet, or if symptoms return as soon as the patient returns to a normal diet, I believe the patient should then be treated surgically.

* * *

THOMAS O. BURGER, SAN DIEGO.—Doctor Mentzer's emphasis of history is the most valuable single agent in establishing a diagnosis of obscure condition of the gall bladder. The history in gall-bladder disease is equally as important as in any other condition that we have in the abdominal cavity, or it may be of greater importance. However, many of us are unable to obtain an intelligent, tangible history that is at all definite. "An indefinite dyspeptic" history which emphasizes a distress in the upper abdomen all the way from soreness to severe pain, especially if gas is a prominent accompaniment, is a more or less broad diagnosis for chronic cholecystitis. But before accepting this method of diagnosis it is urgent to rule out all other possible causes of complaints.

Cholecystography gives a definite picture of function and helps to show stones which would otherwise not be found on a flat plate. Therefore, it is imperative in all questionable diagnoses to have this method carried out and also some of the other tests that are available in gall-bladder conditions. There are very few exceptions to the fact that chronic cholecystitis with stones or without is of infectious origin (cholesterol stones may be an exception). Therefore, we are to consider the conditions from a standpoint of irritation to the duodenum, that is, the functional or mechanistic standpoint of the digestive organs plus the problem of infection which has its definite effect here as well as in other focal infection. Cardiac dysfunction is caused undoubtedly very frequently by gall-bladder conditions, and in this instance I think the mechanistic as well as the focal infection idea may both be considered from the standpoint of chronic cholecystitis.

Heart complication is sometimes very difficult to diagnose as to whether its cause is the heart or the gall bladder. These are the patients that unquestionably need what might be termed a clinic diagnosis by the internist, the x-ray man, the gastro-enterologist, and the cardiologist. At times these different specialists are hard pressed to decide which and what shall be done. After a complete examination has been done thoroughly, it is a matter for the good general doctor who can use horse sense and judgment to determine whether or not this patient shall be treated medically from the vague or indefinite cause of trouble, or whether he shall be subjected to surgery. The conscientious surgeon is not willing to open these abdomens unless there is a positive finding reported by the laboratory, or a definite physical tenderness, or a typical history. This last, as Doctor Mentzer mentioned,

often emphasizes that which is telltale, and yet we at times are chagrined to find little or nothing where we had expected definite pathology. Again we must remember that gall-bladder symptoms and findings are not always constant.

University of California Doctor Tells Diagnostic Traits of Undulant Fever.—As an aid to physicians of the state, Dr. J. C. Geiger, associate professor of epidemiology at the University of California Hooper Foundation for Medical Research, has just summarized present knowledge of the comparatively recently discovered disease undulant fever, which is transmitted to human beings by goats, cows, and pigs, in an article for the bulletin of the California State Department of Public Health.

Undulant fever, he says, is oftentimes a puzzle to the physician, as its symptoms are suggestive of such other diseases as typhoid fever, malaria, tuberculosis, rheumatism, focal infections, sinusitis, appendicitis, and tularemia. He stresses the point that laboratory analyses offer the most dependable means of deciding whether or not patients have the disease.

He says: "As far as America is concerned, undulant fever is comparatively a newly recognized disease. The first case was reported about twenty-four years ago. The available evidence indicates that the causative organisms are of three general types, and usually classified as to host. The variety known as *Brucella melitensis* ordinarily prefers the goat; *Brucella abortus* ordinarily prefers the cow, and *Brucella abortus* var. *porcine*, ordinarily prefers the hog. Any of these may cause undulant fever in man.

"The epidemiologic evidence is far from being definite, complete, or conclusive. There is no doubt that raw milk, whether it be from goats or cows, offers indisputable chances for infection, provided the herds supplying them are shedding the organisms in sufficient amounts and of sufficient virulence. The low index of the disease in children and the present statistical superiority of the disease, especially in rural sections, has been used as a basis for assuming that many cases may be due to contact with infected animals. Such control measures as pasteurization of all milk and the elimination of infected animals from herds delivering certified raw milk are advocated."—*University of California Clip Sheet.*

Tulane University Names Medal After University of California Faculty Man.—Word has been received on the Berkeley campus of the University of California that Tulane University, in New Orleans, La., has created a public health award for outstanding senior or graduate students which will be called the "Geiger Medal," in honor of Dr. J. C. Geiger, associate professor of epidemiology in the California Medical School.

In an editorial in the *American Journal of Public Health*, mention of the new award is made as follows:

"There has been established at Tulane University an award to be known as the 'Geiger Medal,' to be granted yearly to that student of the university, either senior or graduate, who prepares the best thesis on some phase of public health of particular interest to the southern states or countries contiguous to them.

"We cannot but rejoice at this recognition of public health by our leading southern university.

"The medal is named in honor of Dr. J. C. Geiger, at present associate professor of epidemiology in the Medical School of the University of California. Doctor Geiger is well known for his epidemiological studies in connection with the work on botulism done by the United States Public Health Service with the department of hygiene of the University of Chicago and the University of California. He was assistant health commissioner of the city of Chicago, and was one of those who, to all intents and purposes, was dropped by Mayor Thompson."—*University of California Clip Sheet.*

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Leaflet Regarding Rules of Publication.—California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS

ROCKEFELLER AND HOOPER FOUNDATION REPORTS

The Rockefeller Foundation Report.—President George E. Vincent's review of the work of the Rockefeller Foundation for the year 1928 presents a story of achievement in every way as fascinating as those of previous years. It seems unfortunate, however, that the vast philanthropic activity which this foundation carries on in many fields of medical endeavor in our own and in many foreign countries cannot receive more ample publicity; publicity which would permit the thousands of Americans who have a right to know, to come into a better understanding of the bigness of this institution and of the splendid service which it renders to the human family in many different lands.

In a previous issue of CALIFORNIA AND WESTERN MEDICINE (September 1927, pages 383 and 394), the activities of the Rockefeller Foundation were briefly discussed. During the year 1928 the large sum of \$21,690,738 was spent in preventive medicine activities such as the following: investigations concerning yellow fever, malaria and hookworm; support of eighteen medical schools in fourteen countries; development of professional public health training in schools and

field stations; aid to nursing schools in ten countries; emergency budgets to eighty-five county health organizations in seven states of the Mississippi flood area; aid in establishment of national health services in twenty-three foreign countries, and state health departments in nineteen American states. . . .

* * *

The Past Record of the Rockefeller Foundation. The Rockefeller Foundation came into existence in 1913, and since then has expended from its income and principal a total of \$144,189,000, surely a vast outlay and a splendid expression of the magnitude with which large works are nowadays being carried on.

A reorganization of the Rockefeller Foundation took place last year, whereby several other Rockefeller philanthropic activities were consolidated with it. After the expenditure of the vast sum above mentioned, it will still have resources of the book value of some \$168,000,000 to carry on its work. Under the new form of organization the scope of the Foundation's activities will be extended so that, in addition to public health work, new activities for the advancement of knowledge in the medical, natural and social sciences and in the humanities will be promoted upon broader lines than heretofore.

* * *

Its Work Worthy of Greater Publicity.—When the splendid record of achievement in service to the human race is considered, which already is to the credit of the Rockefeller Foundation, one cannot help but feel regret that modern-day newspaper journalism is seemingly so little interested in presenting to the people of the United States the work of such a beneficent factor in human civilization. What a host of splendid feature stories could be constructed from the American and foreign experiences of the representatives of this Foundation, and what a vastly greater inspiration the reading of such activities would be than can come from the many pseudohealth columns which nowadays confront us in so many newspapers of America.

* * *

The George Williams Hooper Foundation of California.—A much lesser known instrumentality in public health work than the Rockefeller Foundation is the George Williams Hooper Foundation for Medical Research, one of the subdivisions of the University of California and which has its home on the affiliated colleges site on Parnassus Avenue in San Francisco. It came into existence through a bequest from the late George Williams Hooper, a lumber merchant, whose will thus recited the objects of the foundation:

The net income of the endowment fund shall be expended in the maintenance and conduct of said School of Medical Research, which shall conduct and carry on investigations in the sciences and arts of hygiene, medicine, and surgery; also in the nature and

causes of disease and in the methods of its prevention and treatment, and shall disseminate gratuitously all knowledge so acquired.

In the Hooper Foundation we deal with a California institution working under the patronage of the state and doing efficient service in ample measure, all of which, up to the present, is altogether too little known to California citizens.

The director of the Hooper Foundation is Dr. Karl F. Meyer, who is ably assisted by a corps of skilled and experienced workers, who under Doctor Meyer's guidance are constantly carrying on a large number of researches of special interest to Pacific Slope physicians.

The financial resources of the Hooper Foundation are not at all comparable to those of the Rockefeller Foundation, but the spirit of service is just as intense, and in its field its capacity for good as far-reaching.

* * *

Some Recent Researches and Studies Brought Out by the Hooper Foundation.—Mention of some of the work being done in this institution is certainly worthy of mention in the official journal of the California Medical Association, and is here given.

During the last year researches of which mention could be made included:

A leprosy study tending to prove that leprosy is primarily a soil infection, but a disease which may possibly be transmitted by direct or indirect contact.

The production of an antipneumonia serum.

An experimental infection of animals with a small number of tetanus spores was worked out.

Other studies were on:

Toxin produced by the botulinum organism, and on the heat resistance of its spores.

On the paratyphoid group of bacteria.

On the outbreaks of mussel poisoning in California in 1927.

An undulant fever and its causative organism.

On skin reactions in animals and persons who are hypersensitive to certain foods, bacteria, etc.

On improvement of the convalescent serum of poliomyelitis which was originally brought out by the late Dr. E. C. Fleischer.

On various diseases which may develop spontaneously in laboratory animals.

In addition to the above, a number of special researches were made in coöperation with members of the faculties of the medical and dental schools of the University of California and with some of the trade and industrial corporations of the state.

* * *

The Coleman Fund for Deafness Research.—In the Foundation, under the Coleman Memorial Fund for the prevention, cure and alleviation of deafness, a considerable number of important and valuable investigations have been carried on, particularly in relation to otosclerosis.

In this connection members of the medical profession are reminded that "Every sufferer from progressive deafness (otosclerosis) owes it to those who in the future may become afflicted with this dread disease, to aid in these investigations

by bequeathing his temporal bones after death to this or some similar research institution for study."

Otosclerosis is one of the diseases which has baffled the best efforts of otologists throughout the world to unravel its causation and development and so pave the way for successful treatment. Physicians should keep in mind that patients afflicted with otosclerosis may render a distinct service to humanity by bequeathing their temporal bones to the Coleman Fund of the Hooper Foundation.

Readers of CALIFORNIA AND WESTERN MEDICINE who are sufficiently interested and who wish to know more of the work which is being done by the Hooper Foundation, an institution of which every Californian should feel proud, may obtain an interesting pamphlet, "In Alleviation of Human Suffering," by writing to the director of the institution. It is well for all of us to keep in mind that the Hooper Foundation of the University of California is an institution with which every Pacific Slope practitioner of the healing art may well maintain a mental contact.

A LOS ANGELES WINE TONIC ORDINANCE—A GOOD EXAMPLE OF A. M. A. PRESIDENT THAYER'S "ILL-CONSIDERED PROSCRIPTIONS"

Los Angeles Passes an Anti-Wine Tonic Ordinance.—Elsewhere in this issue, in the correspondence column of the Miscellany Department, is printed a copy of the so-called wine tonic ordinance which was recently passed by the unanimous vote of the fifteen councilmen of the metropolitan city of Los Angeles. The daily press informed the public that this ordinance was primarily passed to prevent the sale of so-called wine tonics during the Christmas holidays; although current news dispatches of the day stated that the federal prohibition authorities had taken that matter in hand through the issuance of an order making it obligatory to have all wine tonics contain 30 per cent of solid matter, thus practically placing such mixtures in the nonbeverage class.

So far as the medical profession was concerned, it may be assumed that few doctors would have wished to prescribe such so-called wine tonic mixtures. Physicians were concerned, however, when lay citizens, even though they were public officials, took it upon themselves to determine what doctors should or should not prescribe, for such lay action involved a principle and an infringement on presumably legal rights, in which members of the medical profession had a very natural interest.

* * *

Protests by Medical and Pharmaceutical Professions Were of No Avail.—When the ordinance was up for consideration, in spite of protests presented by representatives of the medical and pharmaceutical professions, the Los Angeles city fathers proceeded to place themselves on

record as regards wine tonics, even though their action was rather belated, and in view of the federal order, seemingly unnecessary. However, the councilmen were evidently determined, for reasons good and sufficient to themselves, to make it absolutely certain, by the passage of a new law, that no resident in the City of the Angels, during the yuletide and new year's season, should become unduly hilarious by way of the wine tonic route. The city fathers presumably had a prior caucus, for to a man they voted in favor of the ordinance printed in this issue of CALIFORNIA AND WESTERN MEDICINE.

To accomplish the end they sought, it was necessary for the council to define a wine tonic in the ordinance, which definition, it was stated, was framed by one of the more enthusiastic councilmen, and in such brief but all comprehensive fashion that not only wine tonics but a host of other drug store remedies therewith came under the same proscription. The drastic nature and scope of the ordinance and its infringements on the rights of licensed physicians and pharmacists were pointed out to the honorable councilmen and to the mayor, but all in vain. The ordinance was introduced one week, passed unanimously the next week, and on October 24, the next day, was approved by the mayor.

The publicity given to its passage already has led councilmanic bodies in a dozen or more other cities to attempt to emulate the glorious example of Los Angeles in this matter!

* * *

The Drastic Provisions of the Ordinance.—A perusal of the ordinance demonstrates that it is a most excellent example of what might be termed the intemperate legislation so often put forward by some modern-day lawmakers. Every physician and pharmacist knows what a large number of useful medicinal and pharmaceutical mixtures "capable of being used as a beverage" and "containing more than one-half of one per cent of alcohol," may be found on the shelves of drug stores and in the medicine cabinets of most American homes. Under the new ordinance any person residing in Los Angeles who would "sell, serve or give away" to some other citizen (and such act would be committed when a mother gave its child such a solution; or when a physician gave a patient such a mixture, for physicians were given no exemptions in the ordinance) would thereupon by such act become guilty of a misdemeanor. And such act is decreed a misdemeanor for each such separate offense—that is, each teaspoonful so given would be a separate offense and the giver would become liable to a \$500 fine or six months in the Los Angeles city jail, or both, and for each such offense!

* * *

Such an Ordinance Could not Be Literally Enforced.—It must be self-evident to any person of reasonable knowledge of the world that an ordinance such as this, which unless repealed will become a local law thirty days after its passage

by the city council and approval by the mayor, cannot and will not be literally and impartially enforced. This is the kind of lawmaking which does much to lower the respect of many citizens for all law. Not only do citizens become offenders when they violate the provisions of such an ordinance, but the councilmen and the mayor become double offenders because, having taken special oaths to carry into effect all laws of the community, they become false to their trusts when they do not use every endeavor to have laws which they themselves have helped bring into existence, carried out in fullest and most impartial and stringent manner. Public officials certainly have no legal or moral authority to make any exemptions at all to the provisions of a law or ordinance, for in so doing, because of their oaths of office, they themselves become law breakers.

* * *

Doctor Thayer's Remarks at the Portland A. M. A. Meeting Aptly Apply to this Ordinance. As was so well said in his Portland address, by this year's retiring president of the American Medical Association, Dr. William S. Thayer of Johns Hopkins University:

As a nation, we have of recent years set a rather sorry example in the passage of inconsiderate, ill-considered and intolerant proscriptions and prohibitions, . . . Such laws cannot be enforced; they defeat their own ends. Intolerance is the most fatal enemy of liberty. . . .

* * *

Deplorable Results Attendant upon the Passage of Such an Ordinance.—It will be interesting to watch the future of this ordinance. When it passed, the newspapers of the city referred to it as the "wine tonic ordinance" and gave little publicity to the protests of the medical and pharmaceutical professions, so that citizens at large and many members of the medical and pharmaceutical professions were not aware of its drastic and far-reaching nature.

The ordinance would seem to be a distinct infringement upon the legal rights given to a licensed practitioner of medicine to practice his art and to use those substances and solutions which he believes would be beneficial to the health or lives of his patients, and which are not inimical to the public health.

What a pity that municipal and other legislators should permit themselves to be carried off their feet by supposed public clamor or political influences, and to allow themselves to pass legislation which not only cannot be enforced but which is so ridiculous and impossible of impartial enforcement, that that majesty and respect for law which is so necessary and fundamental for progress in all real civilization is through such unwise action, put in jeopardy.

Our advice to the Honorable City Council and Mayor of Los Angeles, as regards this ordinance, would be to promptly reconsider their action, and if the orders and rulings of the federal prohibition department are still deemed inadequate, to frame an ordinance that would make for real temperance and which could be impartially enforced.

In such an effort the officers of the medical and pharmaceutical associations would be only too glad to render advisory and other aid. If the ordinance is permitted to remain on the statute books, in dead letter or other form, a dose of "pitiless publicity" might be of benefit to the community. The ray of hope in this matter, and also as regards sanity in legislation, may be in a referendum which, at the time these lines are written, rumor states, may be invoked. If such a referendum is presented, the ordinance would lie over until the local or state elections in the fall of 1930. In the meantime, the honorable city fathers of Los Angeles would have an opportunity to give their attention to a host of vastly more important civic problems which are pending on the files of the city council.

TELEPHONED NARCOTIC PRESCRIPTIONS

Changes in the State Narcotic Laws.—Under the new California anti-narcotic law, which was passed by the legislature at its last session and which became effective August 14, 1929, the control of the sale and dispensation of narcotics in the State of California was transferred to the new Narcotic Division of the Department of Penology of the State of California. Senator F. H. Benson is the director of the division.

Both Federal and California laws state that the only legal authority upon which a pharmacist may dispense narcotics is a prescription which contains, *in the prescribing physician's own handwriting*, the name and address of the patient, the actual date upon which the prescription was signed and the physician's signature. The Federal law, which is written into the California law, has been interpreted to mean that dispensation of a narcotic by a pharmacist upon the telephoned instruction of a physician is in direct violation of the law, no matter whether the physician himself signs a prescription ten minutes after such dispensation has been completed.

In the past, the authorities have been somewhat lenient in the enforcement of this clause in the law and, as is usual, advantage has been taken by those who used this lenience to indulge their laziness, carelessness or indifference, and did not confine the use of this official tolerance to times of real emergency.

* * *

Narcotic Laws Will be Enforced.—As a result, endeavoring to correct the present state of affairs, the Narcotic Division has announced that it will not countenance this violation of the law and has already caused the arrest of a licensed pharmacist who dispensed a narcotic upon a prescription telephoned to him by a duly licensed and registered physician.

The incident cited above indicates the present temper of the Narcotic Division, and it is well for us to remember when we are tempted to phone a druggist and ask him to deliver a narcotic to a patient that we are asking him to break the law and place himself in jeopardy in order to save ourselves some effort. We cannot blame him or be resentful when he refuses our request. Coinci-

dentally, the physician is also breaking the law in making the request and, at the will of the Narcotic Division, may be arrested also.

Committees from the various retail druggists' associations and some of the component county societies are working together in this matter, endeavoring to place the situation, as it exists, before the members of their respective organizations. Further consideration of the situation will be had by the officers of the California Medical Association and further information will be contained in future issues of CALIFORNIA AND WESTERN MEDICINE, or letters sent to you by the Council or Executive Committee.

In the meantime do not violate the law or ask others to abet you in its violation.

SOME TRENDS IN HOSPITAL TREATMENT, IN RELATION TO THE "HIGH COST OF MEDICAL CARE"

Reasons Why More People Do Not Go to Hospitals.—In the last few years much has been said in medical meetings on the advisability of teaching the public how advantageous it would be if the members of the public who were sick or injured would more often go to hospitals. The benefits of the more skilled nursing care and the better environment of the hospital service have been cited as good reasons for giving such advice.

Incidentally it has also been quietly acknowledged in professional circles that the physician or surgeon who has a very large practice is able to do much more work and with far less wear and strain to himself when his patients are housed in hospitals than when he is obliged to visit a corresponding group of patients living in different parts of a city and each with a somewhat different social and family environment. The younger or less busy physician also very often finds personal satisfaction in his hospital work, because even though he may have fewer patients the hospital makes for pleasant contacts with colleagues whom he meets as rounds are made.

However, the major argument for hospital care is that the patient as a rule there receives much better treatment than in the home, and that increased hospital cost is only relative in that the patient through hospital care is able to return to his home and his work at an earlier date than would be possible under treatment at home. From the standpoint of cold-blooded scientific medicine, the argument just stated is not without considerable merit. If all the patients sent to the hospitals for this better care had the means enabling them to pay for the extra cost of the same, there seemingly could be no objection to this plan of general or universal hospital treatment.

Therein, however, lies the rub, or the bone of contention. For the great majority of patients do not have the financial resources which permit them to enter a hospital, without attendant worry or disaster over the overhead costs incident to such hospital regimen. And because of this fact, the theory of the better care in hospitals, and of sending more sick and injured people to the hospitals, like other theories that are not based on con-

ditions as they actually exist, loses much of its force.

* * *

Some Limitations of the Hospital Propaganda. Since many physicians have permitted themselves to be parties to this propaganda to have more and more patients go to the hospitals for better care, in preference to receiving home treatment, it may be well to consider some of the facts as they are, and to ask whether or not such propaganda is desirable at this time, and as to what and to where it will lead if continued.

To start the discussion let us look at the existing set-up of general hospitals in states like California, Nevada, and Utah, since the readers of CALIFORNIA AND WESTERN MEDICINE belong to the medical professions of those three states.

Practically no all bed charitable hospitals of any size exist in any of these three states; if the public county or city hospitals, sanctioned by law to care for penniless or indigent sick and injured citizens, are excluded. The number of other hospitals in these states which have any considerable number of free or semi-free beds is also almost nil. To put it frankly, practically all hospitals in these states which offer to care for citizens sent in by physicians in private practice have heavy carrying charges on either their properties or current overhead, more often on both than on one.

With the cost of grounds and buildings we shall not here concern ourselves. If the real property, its improvements and its equipment represents fair value for the amount invested therein, and if the buildings, as hospital structures, and the equipment, are well adapted to hospital needs from both the scientific and administrative standpoints, there should be little criticism from lay sources. For in most instances each such institution came into being as a result of the need for an average or a peak hospital load in its respective community.

As regards the administrative overhead of hospitals, there can be wastage in that department, through inefficient or mediocre management or through too heavy salary rolls, just as there can be in a hotel, for instance; because, in one sense, a hospital is little different from a hotel except that its patrons are sick instead of well persons.

* * *

The Cost of Some Professional Services in Hospitals.—This leaves for comment what might be called the special professional services which are part of the hospital itself, namely, the nursing expenses. The cost for professional services of physicians and surgeons is a cost apart from that of hospital care, and does not come under consideration in this argument.

Scientific medicine made comparatively little or slow progress up to a half century ago, when bacteriology gave a new insight concerning infectious diseases and many medical and surgical conditions. Professional nursing, the new handmaiden to this modern scientific medicine, came into existence about that time, and soon gave Americans the "trained or graduate nurse," or latterly, as she is called, the "registered nurse—

R. N." Today, when a modern hospital is thought of, there comes at once the visualization of the trained or graduate nurses, who are so intimate a part of its institutional activities.

* * *

Professional Nursing was Sponsored by the Medical Profession.—Members of the medical profession, who laid the foundations for modern trained nursing, who have been the sponsors of trained nurses everywhere, and who have taught the public to accept trained nurses, have a record of service on behalf of nurses sufficient to protect them against assertions of selfish or other undesirable motives if tendencies in modern professional nursing are somewhat critically examined by them. Such survey is desirable if it is possible that a considerable portion of the "high cost of medical care" to which so much publicity is given among the laity, verbally and in print, is found to rest somewhat upon the costs of modern-day hospital nursing.

* * *

How Much Nursing Do Many Hospital Patients Need?—To view the facts as facts, all must acknowledge that many patients in hospitals need only a minimum amount of nursing care, and that if a member of the family could come in and become a part of the hospital system, and give personal and other care to the sick relative, the patient so cared for would go on to good convalescence. For given the case of a hospital patient who has a relative with intelligence, that patient as a rule would prefer the care of such a loved member of the family to that of a stranger, even though she be a trained nurse, who at times may be psychologically or otherwise distasteful to the patient.

It is granted by all, that seriously ill patients in hospitals, especially those suffering from surgical conditions, only too often need all the constant and excellent supervision which only the well-trained graduate nurse is as a rule able to give, and such patients may need such care every hour in the twenty-four. Likewise, it has always been agreed that no one nurse could give continuous service without adequate sleep and rest. At least two shifts of nurses are conceded to be necessary, and perhaps three, when seriously ill patients are being cared for.

But it is a very considerable jump from the affirmation that three shifts of trained nurses may be necessary in the care of a limited number of patients to the contention that all hospital patients for whom a certain amount of nursing attendance and supervision is desirable should be provided with three such graduate nurses, each on an eight-hour, sort of labor-union schedule, and each receiving \$6 to \$10 per day, depending on the case. Such rates would mean \$18 to \$30 per day for a single day's nursing care.

Some hospitals in California have already accepted such a system and have endeavored to point out that it is an economical system. So it may be, if the patients involved have adequate financial resources, but it is certainly not if the

patients do not possess such means. The great majority of hospital patients lack the possession of such ample financial reserves.

* * *

One Solution of the Fees Involved in an Eight-Hour Nursing Day.—One solution for this new financial problem that has recently demanded the attention of hospital administrators (a considerable number of whom are already almost smothered by their financial overheads) has been the suggestion that if under pressure the eight-hour schedule is forced on hospitals that it be accepted at so much per hour instead of so much per day, with the eight-hour day as the maximum or industrial limit for a calendar day's work.

* * *

Some Other Trends.—More recently it is said that some of the more enthusiastic graduate nurses hold that nurses should charge somewhat as do some surgeons; that is, a nurse who states she is a specialist in pneumonia, for instance, assumes the nursing responsibilities on the basis of a fixed or lump fee for the services to be rendered, say \$500 for caring for a pneumonia patient. If such a movement should be promulgated by nurses in general, it would not be long before many of them would have a greater net income than do many physicians, who are on call throughout the day and night, and who are paid when the patients think best.

Along the same line, the old story of the man who rang a physician's door bell at one o'clock in the morning, on a rainy night, to show the physician the way to the home of a sick relative in the country, may be here told. Upon arriving at the house, the man asked the physician the fee for the visit, paying the physician \$5 and dismissing him after telling him that the taxi charge would have been twice or thrice the amount. Our nursing aids evidently intend to take no such chances, for we have been told that a recent fee schedule states that calls to service after the p. m. will contain an extra charge for taxi service.

* * *

Important to Study All Factors in Hospital Costs.—It is quite possible that the presentation of some of the facts here made, brief as they necessarily must be because of the limitations of this column, may seem somewhat extreme or biased. Such is not the intention. If these comments, however, serve to stimulate thought on these and related subjects among the component county societies their object will have been achieved.

Excluding a rather small number of physicians and surgeons, it is well established that the great majority of physicians and surgeons are today not receiving fees which, in purchasing power, are as high as those received in the days before the war, that is, in the days before the present "high cost of living."

As has been stated in this column, members of the medical profession owe it to themselves, their profession, and to the public, to be keenly interested in these economic problems. Indifference

here may permit cumulative movements that could play havoc with medical standards and practice. Suggestions for betterment of existing conditions are invited by the officers of the California Medical Association.

The Ten Commandments of Cancer.—1. Do not cut across a cancer and leave part behind. The part remaining will grow more rapidly than if you had left it alone, altogether.

2. An operation for cancer is an operation to save life. Cosmetic results are to be considered, but they are not to be weighed against recurrence and death a few years later.

3. Never manipulate a cancer roughly either before or during operation or more often than is necessary to make a diagnosis. To do so is the easiest way to drive cells into the lymph or blood current—hence metastasis.

4. Do not let a woman drag you into her delusion that her early cancer symptoms are due to the menopause. The menopause is a normal physiological state, and if the woman's organs are healthy she will be healthy.

5. Repair every cervix that is eroded, everted, or the seat of a discharge.

6. Do not rule out cancer because the patient is not old. About 10 per cent of cancers occur before thirty-eight.

7. Do not tell your patients they have cancer if you are sure they will follow your advice at once. If they are inclined to delay, tell them frankly what they have and what will be the consequence of delay. If they make their own choice, let it be done with full knowledge of facts and prospects. Tell the relatives or friends in any event.

8. To save your patients from cancer save them from delay. Do not wait for pain and cachexia—the signs of impending death.

9. Do not admit that incurable cancer is unrelievable cancer. Ligation, cautery, palliative removal, electrocoagulation, irradiation, and other proven physical methods may change distress to comfort and add months or years. The patient who appeals to you for relief is the one to be considered—not reputation or "the effect on the community."

10. Be always on the watch for early suspicious symptoms. Be prompt to follow them to a definite diagnosis. Be courageous enough to insist on immediate proper treatment (Weekly Roster and Medical Digest).—*Illinois Medical Journal*, September 1929.

Dangers of Hydrocyanic Gas.—A conference was held during the month between representatives of the Board of State Harbor Commissioners, the State Department of Public Health, and the Industrial Accident Commission, to consider the possible use of hydrocyanic gas for fumigating purposes on the docks. This gas is used to fumigate vessels and cargoes. If cargo is placed on the dock and a tarpaulin is struck by trucks or moved by a passer-by, the escaping gas might kill a number of persons in the vicinity; it was used with deadly effect in the World War. The Board of State Harbor Commissioners has issued an order against the use of the gas on any of the docks.

New dangers will follow the passage of the Economic Poison Act. Strict precautions surround the sale of poisons under one pound in weight. These restrictions are now removed when the purchase exceeds one pound. Hydrocyanic gas, for instance, can be purchased in large quantities. It is used to fumigate trees in orchards. Sometimes it is brought into play to kill unwelcome visitors, not of the human species, in sleeping quarters. Its escape out of bounds will cause havoc some of these days, and public attention needs to be drawn to the wholesale use of poisons in industrial and public activities, to the end that disastrous results may be avoided.—*Reports of California Department of Industrial Relations.*

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members. Every member of the California Medical Association is invited to submit discussion suitable for publication in this department. No discussion should be over five hundred words in length.

Allergy

Allergy—Impressions Gathered From the Portland Meeting.—There are several general impressions of the progress made in the study of allergy that were evident from the Portland session. The realization that this new field of medicine is firmly grounded was obvious, and that this new subject was given its place along with other branches of medicine is an important advance.

Twenty-five years ago the rôle of infections as a principle cause of disease was emphasized; now the equally important and probably distinct group of diseases, those of hypersensitiveness, is encroaching on the place in pathogenesis held by the infectious group. The conception of this cleavage is not without many opponents who have been attempting to bridge this natural gap with many superficial interpretations of experiments.

The most striking feature of the program was the absence of discussion on the general subject of vaccines. In fact, vaccines were mentioned only to be condemned.

The enormous literature on infection-combating measures to relieve hypersensitive diseases is rapidly disappearing. In its place we find the elaboration of empirically worked out necessities for diagnosis. The fact that bacteria, in addition to inducing an infection, can be one of the causes of hypersensitiveness may be recognized, but without confusion.

Professor Manwaring's most interesting paper on the "Immunological Prophecy Found in Ancient Hieroglyphics," gave us a perspective of the work. The fallacy of attempting to put into the practice of human immunology the improperly interpreted, incompletely carried out animal experiments was glaring.

Doctor Hurwitz, in sketching the early history of hay fever, impressed us by tracing our so-called modern diagnostic methods back to 1868.

A plea was made for uniform nomenclature of the various trees, weeds, and grasses, for there is an increasing trend toward accurate detailed local flora studies. Such properly conducted local flora studies constitute the cornerstone of successful pollen treatment. It was agreed that Professor Le Roy Abrams' classification should be the standard.

Dr. George Piness clearly emphasized the importance of specific pollen factors in communities where irritating potash dust was thought to be the all-important factor.

Probably the most illuminating paper was that of Dr. Warren T. Vaughen, in which a plea for general medical diagnosis and care be not overshadowed by a specific allergy study in a patient.

Physical allergy was again emphasized, the

explanation resting on Sir Thomas Lewis' work with "H" (most likely histamine) substance.

The question of food allergies was emphasized. The principle feature of the discussion which followed was the enormous importance of history and the relative unimportance of the skin test. It was significant that the use of digestants as a treatment of food allergy, as outlined by Orville H. Brown, was given a most favorable reception. This seems logical, for it is now definitely known that whole protein can pass through the normal intestinal mucous membrane, and it is also well known that even partially digested protein in passing through the normal intestinal mucous membrane may also cause hypersensitive symptoms. There is no evidence that completely digested protein leads to any difficulty, therefore the use of digestants seem rational.

The fundamental problem of the underlying disturbing elements which make certain human beings sensitive remains untouched.

EDWARD MATZGER,
San Francisco.

Medicine

Pituitary Tumors and Skeletal Changes.—

That the pituitary gland has a definite influence on skeletal growth is a well-known fact, based upon abundant experimental and clinical evidence. Its growth hormone is produced by the pars anterior and is necessarily most active during the period of infancy, childhood, and adolescence. While many general or local conditions may influence the function of this organ, tumors arising within its tissues or adjacent to it should be considered as the most important because of the serious effects produced by them. Such lesions in many instances produce striking and profound changes in the skeletal tissues.

Retarded Skeletal Growth.—Any retardation in skeletal development will naturally take place most characteristically during the period when normal changes are most conspicuous and will play a very minor rôle in the syndrome after adult proportions have been reached. Tumors probably always produce such an effect, not by any specific activity of their constituent cells, but rather by a compression atrophy of the normal glandular tissue. This may be the result of either one of two mechanisms. The first, an *indirect and distant* effect, is sometimes associated with tumors of the posterior fossa when obstruction of the ventricular system results in dilatation of the third ventricle. This tends to compress the pituitary body into the sella with more or less atrophy of its tissues. It is also found occasionally in cerebral tumors which produce a similar though less marked effect by distortions produced in the region of the third

ventricle. The second effect is a more *direct and local* one, the normal tissue being compressed against the sellar walls by a tumor arising within the substance of the gland. Inasmuch as *chromophobe adenomas* rarely occur during the growing period, skeletal changes are extremely rare in the symptom complex produced by them.

With *congenital cystic tumors* arising from the remains of the cranio-pharyngeal duct, it is a different story. They usually develop during the growth period, and the gradually enlarging cyst compresses the pituitary and distorts the optic chiasm and the walls of the third ventricle. The syndrome resulting from these anatomical changes is rather characteristic. The child often complains of headaches, and progressive loss of vision with primary optic atrophy ensues. If the onset is early, before the cranial suture lines have become ossified, the head will become enlarged (hydrocephalus). Adiposity and stunted growth are also prominent features. Diminished gonadal function is manifested by a disturbance or loss of menstrual function in the adolescent female and a retardation of the development of the external genitals in the male (Fröhlich's syndrome). Epileptiform convulsions, with other bizarre symptoms, may also be present to complete the clinical picture. *A failure to grow and increasing adiposity, associated with progressive failure of vision in an adolescent should make one very suspicious that this type of lesion is present.* An interesting and unexplainable feature, particularly in the presence of an extensive hydrocephalus, is the mental precociousness of many of the younger victims. A skiagraph of the head in these cases will usually reveal bony changes of the vault accompanying hydrocephalus together with flocculent calcification in or above a normal or enlarged sella.

Exaggerated Skeletal Growth.—The occurrence of hyperpituitarism, as associated with a chromophile adenoma, is a more familiar condition. Should the tumor begin to grow before the epiphyses have become ossified, *gigantism* results. If it develops in middle life, as commonly occurs, the condition is recognized as *acromegaly*. The characteristic bony changes associated with this condition, discernible by clinical and roentgenographic study, are enlargement of the sella turcica; thickening of the bones of the cranial vault; prominence of the supra-orbital ridges due to hypertrophy of the frontal sinuses, mandibular or occasionally maxillary prognathism with spacing of the teeth, tufting of the terminal phalanges, dorsal kyphosis with a large barrel-like chest, exostoses with occasional fusion of the vertebrae, and hypertrophy of the points of muscular attachment.

It is important in any case presenting abnormalities of skeletal growth to investigate the pituitary as a possible source of the difficulty. If a tumor is present there are usually other evidences present which should make the nature of the condition clear.

CYRIL B. COURVILLE,
Los Angeles.

Allergy

Bacterial Allergy.—Bacterial allergy is a phase of immunity. It is best known and has been most carefully studied as it appears in relationship to tuberculosis. The reaction was first noticed by Koch and discussed by him in 1890, when he announced the discovery of tuberculin. One of his observations was to the effect that the normal and the infected guinea-pig react differently to an infecting dose of bacilli. This observation was known as the Koch phenomenon. It received very little consideration until the time of von Pirquet in 1907, when he called it *allergy*, meaning altered reaction of the cell.

The condition of cell sensitization upon which bacterial allergy depends is produced when bacterial protein circulating in the blood stream comes in contact with the body cells. It changes them from a condition of indifference to one of sensitivity. It is similar to, yet different from the sensitization which takes place to nonbacterial protein. Much study will probably be necessary before the true nature of the difference is understood. Both are due to the parenteral introduction of protein to the body tissues. The origin of the protein in infection is some bacterial focus within the tissues, while that of the allergic diseases caused by nonbacterial protein is from without the body, the entrance being made through mucous membranes, or the skin.

Cell sensitization and a consequent allergic reaction to future contacts between the body cells and the specific bacterial protein, which is responsible for the sensitization, is now found in several diseases other than tuberculosis, such as tonsillitis, rheumatism, scarlet fever, typhoid fever, sinusitis, bronchitis, etc. In fact, the presence of both humoral and cellular effects is gradually being recognized as a part of the immunity response in an ever increasing group of infections.

Where sensitization exists it exerts a protective influence against the specific bacteria which are responsible for it. It attempts to hold the bacteria to the place of implantation and impedes their passage through the tissues. By its action upon bacterial protein it causes a local inflammatory reaction, the *allergic reaction*, which, in reality becomes the local manifestations of the disease. As a result of the reaction, bacteria are detained or held at the point of first entrance, many of them are destroyed, and in case infection occurs the reaction favors healing.

In tuberculosis the allergic reaction causes the local pathology of exudation, proliferation, caseation, and destruction; it causes the symptoms of the disease and the evidences found on palpation, percussion, and auscultation; it causes the reaction of the cells to tuberculin, the shadows shown on the x-ray film, and the necrosis which is productive of bacillus-bearing sputum. Whenever tuberculo-protein escapes from a focus and circulates in the body fluids, if sufficiently concentrated, it causes reaction, mild or severe, in all unhealed foci. This is the cause of the widespread signs of activity in pulmonary tuberculosis

which, in the past, were often interpreted as an extension of the process at each point where activity is apparent.

The reaction, too, causes proliferation of the cells in the periphery of tubercles, even though they be caseous, and is responsible for scar formation and healing.

F. M. POTTENGER,
Monrovia.

Bacteriology

Economic Value of Mosquito Control.—Current arguments in favor of mosquito control are based largely on the rôle of mosquitoes in the transmission of human disease. More convincing arguments based on the control of economically important veterinary diseases have been largely overlooked. The recent demonstration of mosquito transmission of fowl-pox is, therefore, of general interest.

Klinger, Muckenfuss, and Rivers¹ report that at least two common species of mosquito can transmit this disease, and that the mosquitoes remain infectious for at least two weeks after biting a diseased fowl.

While fowl-pox is rarely fatal, it does cause a serious economic loss through reduction in body weight and interference with egg production.

W. H. MANWARING,
Stanford University.

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Urology

Prostatic Massage.—The technique and indications for prostatic massage are probably as little understood by the average physician as any urological procedures which he is called upon to perform. Pelouze has described these in detail in his recent work.¹ Gentleness is the first and foremost necessity in prostatic massage, as indeed it is in any urological procedure. If prostatic secretion for diagnostic purposes is desired the patient washes the urethra by voiding, then stands or kneels with the body flexed on the thighs. The gloved, lubricated index finger is passed into the rectum as far as possible, its tip reaching a little above the upper margin of the prostate. The vesicles are situated just above this margin on either side, and are stripped as high as the finger can reach by a downward motion, first on one side, then on the other. It is more successfully accomplished if the bladder has previously been filled with an antiseptic solution. After this is repeated several times, first one lobe of the prostate is massaged by passing the finger over its surface in a downward and medial direction, four or five strokes being necessary to cover the lobe. Then the other lobe is massaged in the same manner. After both lobes are thus emptied into the posterior urethra the latter is gently stripped by passing the finger downward in the midline. Inasmuch as the prostatic urethra is the most sensitive portion of the prostate this latter manipula-

tion must be very gentle and not repeated more than once or twice. If this method of massage is carried out, it is seldom that a secretion cannot be obtained, even though only very gentle pressure is used.

Prostatic massage must not be repeated more frequently than twice a week; every five days is preferable.² Very gentle pressure is used at first, and gradually increased at each subsequent treatment. It should never be so severe as to cause the patient extreme pain. A slight show of blood in the secretion is an indication of roughness. As the prostate becomes accustomed to massage it can tolerate more pressure.

A prostatic secretion which contains more than six pus cells per high power field is evidence of prostatitis, and in most cases is an indication for treatment by massage. It is not possible to treat a prostate long enough and thoroughly enough to rid it of every pus cell.³ When there are but four or five pus cells in the high power field, and these are not in clumps, a better result is not required unless the patient still complains of symptoms which might be attributed to the prostatitis. Sexual hygiene can do more than anything else to clear up this last remnant of infection.

Acute inflammation of the prostate contraindicates massage.¹ Disturbance of the organ in this state only serves to increase the inflammation. It may produce abscess formation, or may liberate infection causing a systemic reaction. It should never be massaged in the presence of an acute urethritis, for many prostates have become infected after such manipulation.

A few patients will be found who seem to have an idiosyncrasy for massage. Their symptoms will increase; frequency and urgency will develop after the massage, and no improvement will be evident. Such patients are best treated by other methods. It is doubtful if massage aids in the treatment of the tuberculous prostate; in fact, some authorities state that it is both harmful and dangerous.⁴ The same may be said of the carcinomatous prostate. Massage of the fibrous and hypertrophied prostates is not beneficial unless infection is present, but neither is it harmful.

Summary.—The technique and indications for prostatic massage are important. In massaging the prostate gentleness is paramount. The vesicles and prostate are stroked with a downward and medial stroke, then with a light downward stroke in the midline. More than six pus cells per high power field is an indication for massage treatment, unless there is acute inflammation in the prostate or urethra.

ROGER W. BARNES,
Los Angeles.

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STATE MEDICAL ASSOCIATIONS

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OFFICIAL NOTICE

Narcotic Law Enforcement.—In an editorial in this issue the attention of the members of the California Medical Association is called to the present rigid enforcement of the existing Narcotic Law in California, and members are warned against inadvertent violation thereof. The editorial referred to is published on page 433 of this issue.

COMPONENT COUNTY SOCIETIES ALAMEDA COUNTY

The Alameda County Medical Association held its monthly meeting at the Ethel Moore Memorial Building on Monday evening, October 21. Dr. Guy Lilien- crantz reported a case of Paget's disease, showing x-ray films, with typical lesions in the skull. The doctor discussed the etiology and pathology of this condition stating that further reports would be forthcoming at a later date.

The regular program of the evening was presented by the San Francisco County Medical Society. Dr. William J. Kerr talked on some of his recent European experiences and gave a brief review of the special work done by him on the reactions of the peripheral vascular system. Doctor Kerr spent eight months of his Sabbatical year in London in intensive work on the etiology and treatment of Raynaud's disease. The doctor demonstrated conclusively that this condition is a local reaction to cold and is not controlled by the general sympathetic supply, as has been so extensively believed in the past. Attacks of the disease could be brought on at will by exposure to cold. In most cases of Raynaud's disease the normal reactive powers of the individual to cold could be stimulated and increased by repeated exposures. This fact led Doctor Kerr to condemn the orthodox treatment of protection from cold and to sponsor one which exposes the part to low temperature over considerable period at certain definite intervals of the day.

The second paper of the evening was on the "Etiology and Treatment of Glomerular Nephritis" by Dr. Thomas Addis. Doctor Addis reminded the Association that the three outstanding signs of glomerular or hemorrhagic nephritis, as typified in scarlet fever, are hematuria, facial edema, and hypertension. Fifty per cent of these cases do not improve. Red blood cells may be found microscopically in the urine indefinitely. In reviewing the etiology of this disease, Doctor Addis pointed out the fact that almost invariably glomerular nephritis was the sequel to some type of streptococcal infection, occurring, not during the height of the disease, but after an interval of from seven to twenty-eight days. In discussing the manner in which all this was brought about, Doctor Addis suggested the possibility of allergy as a determining factor. The doctor did not approve of the orthodox method of treating glomerular nephritis by purging, sweating, and protein starvation.

GERTRUDE MOORE, *Secretary.*

CONTRA COSTA COUNTY

A joint meeting of the dental and medical societies was held in Richmond at the new Hospital Richmond on Monday, October 28.

J. Millberry, dean of the Dental School of the Uni-

versity of California, very interestingly spoke on the subject of Organization of Dental-Medical Building.

J. W. Bumgarner, vice-president, presided. The following members were chosen by the chair as a committee to arrange for the annual banquet of 1929: J. L. Fraser, J. W. Bumgarner, J. M. McCullough, S. N. Weil.

S. N. WEIL, *Secretary.*

FRESNO COUNTY

The regular meeting of the Fresno County Medical Society was held at the St. Agnes Hospital, Thursday evening, at 8 o'clock, November 5. Fifty members were present.

Minutes of the previous meeting were read and approved.

Dr. T. F. Madden, chairman of the nominating committee, submitted the following report: W. E. R. Schottstadt, president; G. K. Nider, first vice-president; R. W. Dahlgren, second vice-president; J. M. Frawley, secretary. Member of Board of Governors, Charles James. Delegates to the State Association, A. E. Anderson and W. F. Stein.

Doctor Madden reported that he was carrying on negotiations to have a joint banquet with the Fresno Bar Association. If this does not materialize he will arrange to have a scientific program for the December meeting.

The speaker of the evening was Dr. C. J. Lunsford. He gave a very interesting and instructive talk on "Ringworm Infection." He illustrated his subject with a large number of lantern slides and microscopic specimens, and demonstrated the organism under the microscope. Doctor Lunsford considers thymol the best agent in the treatment of this condition.

Dr. Otto Diederich, in discussing this paper, said he treats the scalp of children by epilation of all the infected hairs with forceps. In this valley there are many acute cases during the hot weather.

Dr. W. G. Millholland said that he has successfully treated ringworm of the nails by giving three times the erythema dose with x-ray.

Doctor Tillman said that his experience with ringworm in this valley was extensive. Most of the cases were eczematoid type.

The paper was also discussed by Doctors Long, Vanderberg, Hare, and Dahlgren.

J. M. FRAWLEY, *Secretary.*

NAPA COUNTY

The regular monthly meeting of the Napa County Medical Society was held at the Veterans' Home, Dr. A. K. MacGrath presiding. A most delicious meal preceded the meeting. Those present at the meeting were: Doctors A. K. MacGrath, George Wood, H. R. Coleman, George I. Dawson, E. F. Donnelley, Robert Northrup, C. A. Johnson, R. E. Poole. Visitors: Dr. B. M. Johnson and Dr. A. E. Chappel.

The minutes of the previous meeting were read and approved. Routine business was transacted. The application of John Robertson, D. D. S., M. D., for membership in the society was read and unanimously approved by those present.

The election of officers for the year 1930 resulted in the following members being elected to office: George I. Dawson, president; Robert Northrup, vice-president; C. A. Johnson, secretary-treasurer.

Doctor MacGrath, president, announced that the Napa County Medical Society had been invited to the Solano County Medical Society meeting to be held in Vallejo, December 3.

The speaker of the evening, Dr. Gordon Hein of

San Francisco, gave a most interesting discussion of some of the more recent methods in the treatment of medical problems, which was of particular interest to the general practitioner. He also demonstrated some interesting x-ray films. This was followed by informal discussion of general subjects.

C. A. JOHNSON, *Secretary*.

PLACER COUNTY

The Placer County Medical Society held its annual meeting in the Masonic Hall at Colfax, Saturday evening, November 2, being called to order at 8:15 o'clock by the president, Dr. Max Dunievitz.

There were present the following members and visitors: Members—Doctors Dunievitz, Russell, Fay, Peers, Thoren, Paul Barnes, William Miller, Durand, C. Conrad Briner, Monica Stoy Briner, Jones, Johnson, Rood, Lewis, and Fanning. Visitors—Doctors Gorley and Cameron of Weimar; O'Connor of Murphy; Ralph Miller of Colfax; Alfred C. Reed, San Francisco; and Gundrum, C. B. Jones, Beach, and Haig of Sacramento.

After attending to routine business, the applications for membership of Ralph B. Miller of Colfax and A. W. McArthur of Lincoln were read and they were unanimously elected to membership, subject to visit by the state office of the California Medical Association.

Then followed the election of officers, which resulted as follows: President, Max Dunievitz, Colfax; vice-president, C. Conrad Briner, Lincoln; secretary-treasurer, Robert A. Peers, Colfax; associate secretary, Charles J. Durand, Colfax. Delegate, C. Conrad Briner. Alternate, Carl P. Jones of Grass Valley.

Following the election, Doctor Dunievitz showed a patient suffering from splenomyelogenous leukemia. This patient was shown by Doctor Dunievitz at the November 1928 meeting, at which time the prognosis was stated to be very poor. Since that time this patient has been treated by x-ray at the University of California Hospital, with very marked improvement.

Dr. Carl P. Jones of Grass Valley exhibited a patient seventy years of age with a fracture of the upper end of the right femur. This fracture was treated by means of an ingenious splint devised by Doctor Jones, which is particularly suitable for such fractures in old people. The patient, while having perfect immobilization of the fragments, is able to change positions and to sit up in bed without pain or discomfort.

Doctor Jones exhibited a number of x-ray plates of similar cases successfully treated, and stated that by use of this splint the danger of hypostatic pneumonia is practically eliminated.

The address of the evening was a "Travelogue Through the Orient," illustrated by lantern slides and given by Dr. Alfred C. Reed, dean of the Pacific Institute of Tropical Medicine, Hooper Foundation, University of California.

Doctor Reed showed pictures of Egypt, Palestine, Mesopotamia, India, Ceylon, Siam, and Japan. It was his desire to furnish those present with a demonstration of the types of people of these countries together with illustrations of the living and sanitary conditions under which they pass their lives. In this way, one secures a proper background to an understanding of the difficulties encountered in treatment and control of those diseases peculiar to tropical and oriental countries.

Doctor Reed's address was extremely interesting and very much appreciated.

ROBERT A. PEERS, *Secretary*.

SACRAMENTO COUNTY

The regular meeting of the Sacramento Society for Medical Improvement was held at the Senator Hotel on October 15, and called to order by President Pope at 8:45 p. m.

The minutes of the previous meeting were read and approved.

Doctor Wilder reported a case of gum found in the bladder of a male patient, aged thirty-nine. The patient had complained of pain and intermittent stoppage of the urine. On examination a foreign body was

found which the patient admitted had been inserted into the bladder several years before. A suprapubic cystotomy was done and the object removed was found to be a portion of gum densely covered with phosphates.

Doctor Gundrum reported a case of paresis which had been treated by malaria and then by thirty hyperpyrexial treatments. In each treatment the temperature had risen to 104 F. Marked improvement in the patient's conduct followed the treatments. A graph illustrated the hyperpyrexia.

Discussion of the subject for the evening, "Symposium on Lobar Pneumonia," was opened by Dr. J. Snyder, who discussed the etiology and pathology. He stated that any organism may cause pneumonia, but the most common are the four types of pneumococci and likewise the *Streptococcus viridans*, Friedlander's bacillus, and the *staphylococcus*. No matter what the causative organism, all types are reportable by law. Of the pneumococcus, types one and two are the cause of two-thirds of all the cases. Type three is found in about 9 per cent of cases, and type four in 25 per cent of cases. The portal of entry is usually through the respiratory route. In either pneumonia we have a predisposing factor, the immobilization of the chest wall, and here the common organism is the type four variety.

Under pathology of pneumonia, Doctor Snyder discussed the four stages found: engorgement, red hepatization, gray hepatization, and resolution.

Pneumonia in pediatrics was discussed by Dr. E. Sevier, who stated that pneumonia in children is common as a primary disease and may occur at any age, but is most common in children over three years of age. In children under two, 75 per cent are of the bronchial type.

The lesions in lobar pneumonia occur most frequently in the following order: left base, right apex, and right base.

The symptoms are sudden in onset and usually disappear in one week. In the signs, bronchial breathing usually shows up late.

Complications are few, empyema being the most common. The termination in lobar pneumonia is usually rapid recovery or death.

The treatment in lobar pneumonia is rest. Mustard paste and diathermy are great aids. The nervous type, due to high fever, is the hardest to combat and treat. Bromids or codein are helpful in this condition. If nervousness appears late the prognosis is grave.

Dr. F. Reardan spoke on complications and emphasized the fact that diagnosis is imperative. In the pulmonary complications pleurisy with effusion is common. Empyema is not uncommon and these complications are dangerous. Massive collapse of the lung should be easy to diagnose, especially by means of the x-ray. Lung abscess may occur and is probably more common than recognized. Gangrene is rare. Hemorrhage may be an initial symptom. In the latter complications, delayed resolution occurs quite frequently. Due to this condition, anoxemia, or a lowered amount of oxygen may occur in the blood.

In the cardiovascular system the complications are not so common but they should be kept in mind. Pericarditis is the most common. Dilatation of the right side of the heart is fairly common, due to lung obstruction. It likewise may be due to a toxic condition. Heart-block may occur. Thromboses may occur any place.

In the gastro-intestinal tract tympanites or diarrhea may occur. Acute dilatation of the stomach is not serious if recognized. Peritonitis due to streptococcus is dangerous and if due to the pneumococcus is usually fatal.

Nephritis may occur and renders the condition grave.

The nervous complications may be simple. These are more common in children. Pneumococcus meningitis may occur, and this condition is grave.

Dr. F. Scatena discussed treatment. In the matter of treatment the patient's resistance is of most importance. Absolute rest in bed in the most comfortable position is demanded. The room should be well ventilated with the patient well covered. Hydrotherapy

for increased temperature adds to fatigue. Alcohol rubs serve the same purpose and are better.

Digitalis, in massive doses at first and then tapered off with small doses, should be given to patients with bad hearts. Caffein is a good stimulant, but may cause too much irritation. Strychnin has been discarded. In collapse, strophanthus grain 1/250 may be given intravenously. Morphin when properly used is the best stimulant and gives the patient much needed rest.

The question of alcohol depends on the physician. It sometimes is necessary. In alcoholics it is useful. In small doses it may be used as a food. It may be used as a stimulant in depression.

Vaccines may be made from cultures and injected to increase the resistance of the patient. This may be useful if given early, but not so if given late.

Serum treatment depends on the typing. Typing is difficult and dangerous, as anaphylactic reactions may result. The polyvalent serum is often used. The results obtained are not sure. Type 1 serum gives good results, but types 2, 3, and 4 vary.

Oxygen is good in anoxemia. The funnel method is not good, and so oxygen, if given, should be given by means of a catheter passed through the nose into the larynx.

Fluids should be forced. Liver insufficiency may arise and sugar should, therefore, be given early to reduce delirium.

The paper was ably discussed by Drs. Gundrum, Lee Wilder, Lindsay, Babcock, Christman, Peers, and Bell.

The applications for membership of Drs. Dorothy Walsh Schallig and Irene Knox Mugford were read for the second time and were voted upon. Both were elected to membership.

There being no further business the meeting adjourned.

HANS F. SCHLUTER, *Secretary*.

SAN BERNARDINO COUNTY

The San Bernardino County Medical Society held its monthly meeting at the Colton Hospital, in Colton, on November 5. The meeting was called to order at 8:10 p. m. Thirty-five members were present.

The minutes of the previous meeting were read and approved.

Dr. Darrell E. Hayhurst of Ontario was elected to membership.

A letter from the California Medical Association regarding a study to provide medical and hospital service for people whose income is less than \$2500 per year was read.

The program of the evening was then given:

Comparative Birth Customs of Primitive Peoples—Dr. Frank H. Pritchard, Colton. Discussion opened by Dr. C. F. Whitman.

Jaundice—Dr. W. W. Roblee, Riverside. Discussion opened by Dr. C. L. Curtiss.

The meeting adjourned at 10:20 o'clock.

E. J. EYTINGE, *Secretary*.

SAN DIEGO COUNTY

A well-attended staff meeting of the Scripps Memorial Hospital was held October 21. After the discussion of hospital cases of interest, the meeting was treated to a report of research work in calcium metabolism in arthritis by Dr. E. F. F. Copp of the Metabolic Clinic. This report covered the detailed study of the intake and output of calcium in two cases of arthritis, one typical of atrophic, and the other of hypertrophic arthritis covering a period of many weeks. The report also dealt with the influence upon the calcium balance of the administration of several chemical agents throughout the experimental period. This work will shortly appear in the *Archives of Internal Medicine*.

The Mercy Hospital staff met October 15, with Doctor Fox presiding. The meeting was featured by an interesting paper by Dr. C. J. Osborne on the "Modern Treatment of Burns," which he preceded by a comprehensive analysis of all cases of burns treated in the hospital during the period. As a slight departure from the scientific program an attractive run

of moving pictures in color was shown by a Bell and Howell representative. Before adjournment it was decided, after some discussion, to experiment with the holding of the regular monthly staff meetings at 8 a. m. in place of 8 p. m.

At the meeting of the San Diego Academy of Medicine, November 5 and 6, Dr. Thomas Addis, associate professor of medicine at Stanford University, very interestingly presented "Newer, More Accurate and Simplified Diagnostic Methods in the Different Types of Nephritis." At the second meeting three cases were presented as typifying distinct clinical entities. Application of methods was made to these cases. Everyone was impressed with the simplicity with which Doctor Addis' methods could be applied, and all were in accord that it was a most instructive and helpful series of lectures.

At the recent annual meeting of the American College of Surgeons in Chicago, Dr. G. R. Stevenson and Dr. J. H. Young were elected to Fellowship.

ROBERT POLLOCK.

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held Thursday evening at 8:30 o'clock, November 7, in the Medico-Dental Club, 242 North Sutter Street, Stockton.

The meeting was called to order at 8:30 o'clock by Dr. C. V. Thompson, president, presiding.

Twenty members were in attendance and two visitors, Doctors Weiss and Vanderleek of Stockton.

The minutes of the previous meeting were read and approved.

The committee appointed by the chairman to look over the books offered by Mrs. W. A. Vilas, widow of the late Walter Nathaniel Vilas, reported that they had accepted the books and that they would be placed in the library of the society as soon as the proper shelving had been put in, the expense of shelves to be met by the society. The committee consisted of H. S. Chapman, J. P. Hall, and B. J. Powell.

A communication from the California Medical Association relative to plans designed to provide medical and hospital service for people with incomes of less than \$2500 per year was read and ordered filed.

Doctor Hull presented a communication from James Cox, proprietor of the Acme Laboratories in the Bank of Italy Building, Stockton, pertaining to deep therapy treatment and the like.

Moved by Doctor Hull that the secretary transmit the letter to the Board of Medical Examiners at Sacramento for investigation whether a nonmedical man has the right to give deep therapy to patients. The motion was duly seconded and carried.

The secretary moved that the chair be authorized to appoint tellers for the election at this time and that the secretary be permitted to give the chairman of the tellers the ballots for counting at 12 o'clock noon on the day of election so that the results may be announced when the society meets at 7 p. m., December 5. The chair appointed Doctors Samuel Hanson, Percy C. Gallegos, and G. J. Vischi. The motion was seconded and carried.

The chair presented Dr. E. Best of San Francisco, who spoke briefly on the mechanisms of the various processes of digestion and the movements of the intestinal tract, and illustrated the movements by a movie film. He showed an Alvarez film, picturing the normal and abnormal action of the small and large intestine. This is a revelation in what films may do for the study of physiology.

The chair presented Dr. Samuel Hanson, who gave a brief discussion of a new pelvimeter for the measurement of the bispinous diameter:

"The importance of the bispinous diameter of the pelvis is now generally recognized," said Doctor Hanson. "A simple and accurate method for its measurement is, however, not yet available. In the methods hitherto proposed the attempt is made to reach both spinous processes simultaneously through the vagina. This is difficult to accomplish even under the most favorable circumstances. The problem is solved in the present method by the introduction of one arm of the instrument into the rectum while the

other arm is within the vagina. The instrument consists of two detachable curved blades, joined crosswise to resemble a pair of scissors. The curve of the left blade is such as to permit its ready manipulation within the vagina while the other blade is within the rectum. A ring is attached to that end of each blade which is to be used internally. The right blade carries a scale at the opposite end from the ring. The smallest divisions on this scale represent a distance of 0.5 centimeter between the rings. Method of procedure: The tip of the middle finger of the right hand is inserted into the ring of the left blade. With the blade in place the index and middle fingers are introduced into the vagina. The right blade is inserted into the rectum by means of the index finger of the left hand placed within its ring. The two blades are now locked, and the spinous processes are identified. The rings are then gently steadied against the spinous processes and a reading is made on the scale. The value obtained represents the distance in centimeters between the spines. The instrument can be applied very easily and almost painlessly even in the multiparous woman."

Both papers were discussed by members of the society and many questions asked, which the speakers answered in a practical manner.

There being no further business the meeting adjourned at 10:15 o'clock.

FRED J. CONZELMANN, *Secretary*.

SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held Monday evening, November 18, at the nurses' auditorium of the Cottage Hospital.

In the absence of President Brush, Vice-president Freidell called the meeting to order at 8:30 o'clock.

The minutes of the previous meeting were read and approved.

Dr. Mark A. Glaser of Los Angeles gave a most interesting and instructive talk on skull and brain injuries, illustrated with lantern slides.

The paper was discussed by Doctors Atsatt, Pierce, Schurmier, Thorner, Jones, Geyman, Lewis, and Spaulding.

Dr. Samuel Robinson was not present to give his paper on "The Surgery of the Large Intestine."

There being no further business the meeting adjourned.

WILLIAM H. EATON, *Secretary*.

TULARE COUNTY

The meeting of the Tulare County Medical Society was held at Motley's Café, Visalia. Sixteen members were present for the dinner at 6:45 o'clock.

The meeting was called to order at 7:15 o'clock by President Furness, who also kept minutes of the meeting during the secretary's absence. (The secretary was unable to appear owing to an emergency call.)

Doctor De Wees of Tulare was elected to membership.

The society's newly purchased stereopticon lantern was inspected and approved.

Dr. H. J. Templeton of Oakland gave a most interesting and instructive talk on the "Diagnosis and Treatment of the Cutaneous Neoplasms." His talk was illustrated with lantern slides, and demonstrations of the methods used. Following the talk, Doctor Templeton was extended a vote of thanks from the society and the secretary instructed to write same in the minutes.

H. G. CAMPBELL, *Secretary*.

CHANGES IN MEMBERSHIP

New Members

Alameda County—Clarence B. Hills and Albert K. Merchant.

Los Angeles County—

George K. Abbott	James Balfour McGuire
George Berger	William R. Owens
Linus H. Bittner	Vincent Joseph Quinn
Konrad Georg Burchardi	Frank O. Ringnell

William Franklin Carver	Bartlett C. Shackford
Robert E. Crusan	William Ellison Shattuc
Gregory Laurence Endres	Victor Ellsworth Thomas
Rogers F. Wakefield	

San Diego County—Hiram M. Presler.

San Francisco County—Phillis P. Bourne, Arnold S. Chaimov, Frederick Gary Dutton, Russell Fletcher, Ralph Arthur Reynolds, Emmett Earl Sappington.

Santa Clara County—Walter Henry Brown, William Herman Geisler, and Thomas F. Ayers.

Transferred Members

Romney M. Ritchey, from Napa to Los Angeles County.

S. Henrietta Frederickson, from Los Angeles to Sonoma County.

Deaths

Clark, Fred Pope. Died at Stockton, November 17, 1929, age 64 years. Graduate of Cooper Medical College, San Francisco, 1887. Licensed in California, 1887. Doctor Clark was a member of the San Joaquin County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Haggart, Fred Stuart. Died at Los Angeles, September 11, 1929, age 57 years. Graduate of Cleveland University of Medicine and Surgery, Ohio, 1897. Licensed in California, 1913. Doctor Haggart was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Koons, Henry Hagus. Died at Los Angeles, October 23, 1929, age 62 years. Graduate of University of Pennsylvania School of Medicine, Philadelphia, 1897. Licensed in California, 1900. Doctor Koons was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Smith, J. Wesley. Died at Los Angeles, November 1, 1929, age 72 years. Graduate of Denver College of Medicine, Colorado, 1895. Licensed in California, 1924. Doctor Smith was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Townsend, Vinton Ray. Died at Long Beach, October 27, 1929, age 48 years. Graduate of University of Southern California College of Medicine, Los Angeles, 1909. Licensed in California, 1909. Doctor Townsend was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

Young, J. Audley. Died at Stockton, October 23, 1929, age 53 years. Graduate of Saginaw Valley Medical College, Saginaw, 1901. Licensed in California, 1904. Doctor Young was a member of the Stanislaus County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

OBITUARIES

Florence Mabel Holsclaw
1871-1929

The medical profession of San Francisco is poorer by the loss of a valued confrère, Florence Holsclaw.

It was Doctor Holsclaw's peculiar privilege to attract to her healing ministry children of every race, color, and station. Her funeral services afforded unique and deeply touching testimony of her all-embracing humanity, her passion for serving children. In the long line that filed by her bier, craving the sad satisfaction of a last look at their devoted friend, passed with weeping eyes, mothers, grandmothers, and children; some black of skin, some yellow; some clad in furs and silks; many, many, indeed, marked by the toil and stress of the struggle with circumstance. Rarely has San Francisco seen so deep, so spontaneous, so heartfelt a tribute to one whose life had gone. Literally her life was laid down in service to those she loved, the poor and the suffering.

For ten years past, every call Florence Holsclaw made, every consultation, every hour spent at the



Florence Mabel Holsclaw

Children's Hospital, every effort given to caring for the foundling babies she so lovingly tended at the Babies' Aid, or spent with the wards of the Associated Charities; in fact, every one of her multitudinous acts of service to the children of this community was made while she faced the threat of death and the certain knowledge that her strength was steadily growing less. And always she faced life and work with calm equanimity and unfaltering courage. Courage was the great outstanding quality that marked her. Courage and a passion for service to the poor, the helpless, and the abused.

Born in 1871, those who loved her are happy to feel that her own childhood and girlhood, passed in Gilroy, were years of unalloyed happiness. She entered Stanford University with the first class, going to it from the University of the Pacific. The world was still rosy for her, but suddenly, economic misfortune overtook her and she had to face life. She mustered to her aid that resilient courage that was so outstandingly hers, and she managed to put herself through medical school.

Among the achievements that satisfied her most was the founding of the sorority Kappa Kappa Gamma of Stanford, of which she was a charter member.

Doctor Holsclaw's approach to medicine was through the nursing profession, and many a surgeon can testify to the capability and efficiency that she displayed as chief operating nurse at the old Waldeck Hospital, then a notable institution in the medical life of San Francisco. Her career as a nurse enabled her to finance herself as a medical student and she gained her M. D. degree at Cooper Medical College in 1907. That same year she joined the staff of the pediatric department of Stanford University Medical School.

Her industry and her great ability brought her prompt recognition, and in rapid succession she was entrusted with the care of the foundling infants of the Babies' Aid and the boarded-out children of the Associated Charities, and was given charge of the clinics for these at the Health Center of the Collegiate Alumnae. These activities Doctor Holsclaw never relinquished. By devotion and understanding she built

up and improved these services to such a degree that today they are recognized as second to none in this country. She became in truth a mother to motherless little ones, sacrificed her comfort and her health with all a mother's fierce willingness to do for her babies. And in her ministrations to these she taught and developed a number of splendid younger medical women who, she was happy to know, could and would carry on her service to children with devotion and high ideals.

In 1914 Doctor Holsclaw joined the staff of the Children's Hospital, and she had risen, at the time of her death, to be chairman of the department of pediatrics and chairman of the staff in the Children's Hospital. Her pride in that institution went hand in hand with her devotion to the sick and friendless babies of the community.

In 1918 the University of California induced Doctor Holsclaw to join its teaching staff as instructor. Her keen clinical sense and sound teaching methods rapidly brought her recognition that was expressed in promotions, so that in 1928 she was made clinical professor of pediatrics.

There are some lines written by Charles Singer estimating the physician Hippocrates, that any who knew Doctor Holsclaw will agree might justly be applied to her: "Learned, observant, humane, with a profound reverence for the claims of his patients, but an overmastering desire that his experience shall benefit others; orderly and calm; grave, thoughtful, reticent, pure of mind and a master of his passions."

Florence Holsclaw is gone; the profession has lost a fine clinician, a sound teacher, a loyal upholder of its best traditions. Her friends have lost a friend in the best sense of that word; her patients an assiduous, understanding, devoted physician; those little ones who are friendless and homeless and parentless, a mother heart and a protecting care.

There is a promise written: "Inasmuch as ye have done it unto the least of these, ye have done it unto Me." It is a promise that brings much of hope and of comfort to those who labored with Florence Holsclaw and who valued her. For, surely, if any one since the Galilean has labored lovingly with "the least of these," that noble woman did.

LANGLEY PORTER.

* * *
Daniel Franklin Royer
 1852-1929

Daniel F. Royer was born in Waynesboro, Pennsylvania, March 21, 1852. Ancestry, French and English Colonial. Education, public schools and state normal. After graduation taught school four years, then studied medicine at Jefferson Medical School, taking his M. D. degree in 1875.

Doctor Royer began his successful and adventurous career in Alpina, South Dakota. Was Indian agent at Pine Ridge during the eventful days of Sitting Bull. Served two terms in the Dakota legislature, during a part of the last session acting as speaker.

He was in the very prime of life when he came to Orange in 1896, and immediately became prominent in civic and medical affairs. Obtained his California certificate in 1897 and was admitted to the Orange County Medical Association in 1898, and later to the California Medical Society. At the time of his death he was a Fellow of the American Medical Association. For many years he had a very extensive practice. During the World War he was the medical member of the local draft or exemption board. Was local surgeon for the Southern Pacific, Santa Fe, and Pacific Electric railways.

Notwithstanding his busy life as a general practitioner in medicine, he found time to become interested in civic affairs. He was a member of the Orange City Council for six years and a mayor of the city two years.

Doctor Royer was a member of the Christian Church, a Mason, an Oddfellow, and an Elk.

He died at the home of a daughter in Long Beach, surrounded by his relatives, three daughters, and grandchildren, on October 28, 1929, aged 79.

NEVADA STATE MEDICAL ASSOCIATION

W. A. SHAW	President
R. P. ROANTREE, Elko	President-Elect
H. W. SAWYER, Fallon	First Vice-President
E. E. HAMER, Carson City	Second Vice-President
HORACE J. BROWN	Secretary-Treasurer
R. P. ROANTREE, D. A. TURNER,	
S. K. MORRISON	Trustees

OFFICIAL NOTICE

The twenty-sixth annual meeting of the Nevada State Medical Association was called to order at Elko at 9:40 a. m., September 27, 1929, with President R. R. Craig in the chair.

The presidential address was largely a speech of welcome to our members and visitors.

C. E. Secor, made a number of announcements concerning the various entertainment features planned by the local committee. The scientific program was then taken up.

Scientific Session

Miley B. Wesson, San Francisco, read a very excellent paper on "Diseases of the Prostate and Their Treatment." Discussed by W. Schulte and R. C. Coffey. Discussion closed by Doctor Wesson.

Chauncey D. Leake, San Francisco, gave an address on "Recent Advances in Pharmacology. Discussed by H. R. Hartman, M. B. Wesson, W. Schulte, A. R. Kilgore, and R. Tandowsky. Doctor Leake closed.

B. C. N. O'Reilly, San Francisco, read a very interesting paper entitled "Differentiation of Yaws and Syphilis." Discussion by M. Critchlow and C. D. Leake. Doctor O'Reilly closed.

Thomas W. Bath, Reno, read a masterly paper on "Endocervicitis—Etiology, Pathology, and Treatment." Discussed by J. H. Woolsey, W. M. Edwards, W. A. Haas, and C. E. Piersall. Doctor Bath closed.

This completed the scientific session for the day and after a short recess the president called the members to order.

Business Session

The president called for the reading of the minutes of the last annual meeting. Moved by D. A. Turner, seconded by S. K. Morrison, that reading of minutes be dispensed with. Motion carried.

The report of the delegate to the American Medical Association was then called for and read. Report unanimously adopted on motion of D. A. Turner, seconded by E. R. Creveling.

Medical Practice Act.—E. E. Hamer, secretary of the State Board of Medical Examiners, was granted the floor and explained in detail about the amendments to the Medical Practice Act, passed by the last legislature, speaking especially on the purpose of the annual fee of \$2 now required of each licentiate.

Amendment of By-Laws.—Thomas W. Bath moved, seconded by E. L. Creveling, that the by-laws be amended to read that the retiring president shall install his successor on the last day of each annual meeting; and that the secretary be instructed to write such amendment into the by-laws. Carried.

The secretary presented the names of several applicants for membership, and upon motion by Horace J. Brown, seconded by E. L. Creveling, they were elected to membership.

The resignation of W. W. Cook, formerly of Ely, but now of Pasadena, California, from membership was read and accepted unanimously on motion of D. A. Turner, seconded by E. L. Creveling.

Thomas W. Bath moved, seconded by J. E. Worden, that a vote of thanks be given to E. E. Hamer and Horace J. Brown for their efforts to better conditions of the profession in this state. Carried.

Thomas W. Bath moved, seconded by J. E. Worden, that a vote of thanks be given Horace J. Brown for his untiring efforts in behalf of the association. Carried.

The application for a charter from the White Pine Medical Society was read and, upon motion by

Horace J. Brown, seconded by E. L. Creveling, it was voted to grant a charter to that society.

E. L. Creveling moved, seconded by C. E. Piersall, that all of the visiting essayists be elected to honorary membership in this association. Carried.

Election of officers for the ensuing year being in order, the following were duly nominated and elected: President-elect, R. P. Roantree, Elko; first vice-president, H. W. Sawyer, Fallon; second vice-president, E. E. Hamer, Carson City; secretary-treasurer, Horace J. Brown, Reno; and trustee for three years, D. A. Turner, Reno.

The selection of a meeting place for 1930 being in order, it was moved by D. A. Turner, seconded by E. L. Creveling, that the next annual meeting be held at Bowers' Mansion. Carried.

Thomas W. Bath moved, seconded by E. L. Creveling, that a vote of thanks be given the Elko County Society for the excellent manner in which they had entertained the Society. Carried unanimously by rising vote.

A recess was then taken until 9 a. m. of September 28.

* * *

Second Meeting

The meeting was called to order at 9:35 a. m. by the president, and the scientific program immediately resumed.

Howard R. Hartman, Rochester, Minnesota, read a classical paper on "The Medical Treatment of Ulcer of the Stomach and Duodenum." Discussed by J. H. Woolsey, F. R. Fairchild, J. Z. Brown, R. Tandowsky, B. C-N. O'Reilly, R. C. Coffey, and Albert Soiland. Doctor Hartman closed.

John Homer Woolsey, San Francisco, read an excellent paper on "Surgical Aspects of Duodenal and Gastric Ulcer."

Fred R. Fairchild, Woodland, California, read a masterful paper on "A Discussion of the Complications Following the Surgical Treatment of Peptic Ulcer." The papers of Doctors Woolsey and Fairchild were discussed by A. R. Kilgore, R. C. Coffey, and M. B. Wesson. Doctors Woolsey and Fairchild closed.

Robert C. Coffey, Portland, Oregon, closed the scientific program with a highly instructive and entertaining discussion on "Discussion of Cancer and Its Treatment." This address, given in Doctor Coffey's usual brilliant style, proved to be one of the best features of the meeting. Discussion was by Thomas W. Bath, J. Z. Brown, C. E. Piersall, and A. R. Kilgore. Doctor Coffey closed.

There being no further business the meeting adjourned *sine die*.

* * *

The following members were in attendance at various times during the meeting: D. A. Turner, Horace J. Brown, H. W. Sawyer, John E. Worden, L. B. Sandall, R. S. Tillotson, Wales A. Haas, E. E. Hamer, E. L. Creveling, S. K. Morrison, W. H. Hood, C. E. Secor, H. E. Belknap, C. W. Eastman, J. R. Eby, R. R. Craig, W. M. Edwards, W. A. Shaw, R. P. Roantree, A. J. Hood (Elko), C. E. Piersall, Thomas W. Bath, and G. R. Smith.

The following honorary members and visitors were also present at various times during the meeting: Miley B. Wesson, Chauncey D. Leake, John Homer Woolsey, B. C-N. O'Reilly, Thomas Welsh, F. A. Cutter, W. W. Wiley, T. D. McCall, W. G. Schulte, M. Critchlow, R. Tandowsky, S. G. Kahn, F. H. Morton, John Z. Brown, J. B. Rackerby, A. Soiland, F. Fairchild, Foster J. Curtis, E. D. Le Compte, Howard Hartman, B. J. Lasswell, R. C. Coffey, D. L. Alexander, and A. R. Kilgore.

HORACE J. BROWN, Secretary.

NEVADA NEWS

Erratum.—Attention has been called to an error that appeared in the October issue whereby the name of Dr. A. J. Hood was published as having been elected president of the Pacific Association of Railway Surgeons. The name of the member so honored is Dr. W. H. Hood of Reno.

UTAH STATE MEDICAL ASSOCIATION

H. P. KIRTLLEY, Salt Lake City.....President
WILLIAM L. RICH, Salt Lake City.....President-Elect
M. M. CRITCHLOW, Salt Lake City.....Secretary
J. U. GIESY, 701 Medical Arts Building,
Salt Lake City.....Associate Editor for Utah

COMPONENT COUNTY SOCIETIES

SALT LAKE COUNTY

The regular meeting of the Salt Lake County Medical Society was held on Monday, October 14, at 8 p. m., at the Holy Cross Hospital.

The meeting was called to order at 8:05 o'clock by President C. M. Benedict. Forty-five members and fourteen visitors were present.

Minutes of the meetings of September 9 and 23 were read and accepted without correction.

The following clinical program was presented by the hospital staff, conducted by G. N. Curtis:

Aortitis, R. M. Tandowsky; Bullet in the Brain, J. J. Galligan; Sarcoma of the Tibia, J. J. Galligan, J. P. Kerby, and T. A. Flood; Heart-Block, John Sugden; Brain Abscess Following Frontal Sinusitis, W. D. Donohoe, F. B. Bailey, and E. D. LeCompte; Palliation of Metastatic Carcinoma by X-ray Therapy, J. P. Kerby; Osteomyelitis of the Os Calcis, W. T. Ward.

* * *

Acceptance of the report of the committee on the Salt Lake City Hourly Nursing Service was postponed until the next meeting. J. P. Kerby moved that all other than urgent business be carried over until the next meeting. Seconded and carried.

Communication from the Radium Corporation of Utah was read regarding the method of disposition of the stock of that corporation held by the late Community Clinic. This was briefly discussed by John Sugden. William F. Beer moved that the president appoint a committee of three to investigate this communication and report on it at the next meeting. Seconded and carried. President C. M. Benedict appointed the following committee: M. M. Critchlow, chairman; G. N. Curtis and J. C. Landenberger.

President C. M. Benedict announced that at the next meeting there would be a report from the Special Committee studying means by which a reduction in the number of medical meetings can be obtained.

The transfer card from the Olmstead County Medical Society of Olmstead, Minnesota, regarding Dr. T. A. Clawson, Jr., was read and turned over to the board of censors.

Meeting was adjourned at 9:45 o'clock.

* * *

The regular meeting of the Salt Lake County Medical Society was held at the Newhouse Hotel Monday, October 29.

The meeting was called to order at 8:10 p. m. by President C. M. Benedict. Twenty-nine members and three visitors were present.

No clinical cases were reported.

The following clinical program was presented:

"Low Back Pain" by A. L. Huether and "Back Injury" by J. E. Tyree. These two papers were ably discussed by S. C. Baldwin, L. N. Ossman, M. C. Lindem, L. C. Snow, R. T. Richards, H. C. Holbrook, J. P. Kerby, F. M. McHugh, and C. Young.

The special committee to investigate the Salt Lake City Hourly Nursing Service, consisting of C. M. Benedict and B. E. Bonar, recommended that the Salt Lake County Medical Society go on record as encouraging this institution. J. Z. Brown moved that the report of the committee be accepted. Seconded and carried.

The special committee to consider the proposal of the Radium Corporation of Utah was read by M. M. Critchlow, chairman. The committee was unanimously in favor of accepting the proposition of the Radium Corporation. J. Z. Brown moved that the

report be accepted and that it be suggested that the members to be appointed from each hospital be a member of the medical staff. This was discussed by William F. Beer, M. C. Lindem, F. M. McHugh, C. Young, E. F. Root, G. N. Curtis, M. M. Critchlow, and J. P. Kerby. After a rather heated discussion, William F. Beer finally moved that the motion to accept the report be tabled until next meeting, with instructions to the committee to interview the Radium Corporation again and to report later. This motion was accepted, and carried by a rising vote of 11 to 8. William F. Beer moved that a special meeting be called to consider this question. There was no second.

A letter from B. I. Burns, dean of the University School of Medicine, recommending that the society change the constitution and by-laws so that certain nonmedical teachers at the Medical School might become associate members was read. The secretary read a communication from Olin West, secretary of the American Medical Association, relative to associate members in component medical societies in which it stated that such memberships had been provided for in certain county societies.

J. Z. Brown moved that the question be referred to the board of censors for investigation and recommendation. Seconded and carried.

M. C. Lindem suggested that the secretary be instructed to ask Dean Burns to furnish the names of such members of the medical department of the University of Utah who might qualify for an associate membership.

The secretary made a special announcement that the next meeting of the society would be a banquet for H. Claire Shepardson of San Francisco on November 11 at the Newhouse Hotel at 7 p. m. Doctor Shepardson will read a paper on "Diabetes."

BARNET E. BONAR, Secretary.

UTAH NEWS

The Academy of Medicine held three of the regular weekly meetings during October. The fourth was canceled because of local convention activities which made it inadvisable to try to hold any formal program.

On October 10 Doctor Viko gave a paper on the "Practical Value of Electrocardiography," and Doctor Tyndale reviewed the *Archives of Internal Medicine* for September.

On October 17 Doctor Hunter spoke of his experiences in the European hospitals during his recent trip abroad.

The meeting of the Holy Cross Hospital Clinical Association for October was merged with that of the Salt Lake County Medical Society, and a general clinical meeting was arranged by the hospital staff.

OBITUARY

George L. Smart, 1863-1929

Dr. George L. Smart, prominent Utah art collector and founder of the Springville Art Institute, died Friday morning at a local hospital, following a brief illness with pneumonia. He was stricken Tuesday.

Doctor Smart was noted as an art critic in the West and possessed a valuable collection of paintings. When the Springville Institute was founded the doctor donated a collection valued at more than \$25,000. He had continued active association with the institute as a member of the board of trustees.

Born in London, Doctor Smart came to America with his parents at the age of five, in 1868. The family settled in Salt Lake. Following attendance at the Brigham Young University in Provo, Doctor Smart was given his medical degree in Ohio, and returned to Utah to begin his practice.

He worked for many years in Provo, American Fork, and Springville before moving to Salt Lake. He then took up residence at 237 Seventh East Street, devoting himself to his practice.

Surviving are his widow, Katie Peterson Smart; a daughter, Katherine Elizabeth; two brothers, Fred Smart of Salt Lake and Ralph Smart of Springville, and two sisters, Mrs. Ethel Lobb and Orena Smart, both of Salt Lake.

MISCELLANY

Items for the News column must be furnished by the twentieth of the preceding month. Under this department are grouped: Comment on Current and Recent Articles in the Journal; News; Medical Economics; Correspondence; Department of Public Health; California Board of Medical Examiners; and Twenty-Five Years Ago. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Extension of New York Polyclinic.—The New York Polyclinic Medical School and Hospital announces that it has started wrecking the four buildings adjoining the hospital, and will erect a ten-story building for an out-patient department, transferring the clinical space in its present building to the new building, thereby enlarging its wards so that it can take care of another 150 ward patients for teaching purposes.

The Polyclinic Hospital maintains one of the largest out-patient departments in New York City. The enormous growth of New York City in this central district served by the polyclinic has made it absolutely essential that it provide increased quarters for its clinical work.

The new building will be devoted to postgraduate teaching and will be fully equipped for all branches of medicine and surgery.

Fifth International Congress of Physiotherapy.—International Congress of Physiotherapy will meet at Liege from the 4th to the 8th of September, 1930.

The Congress will be presided over by Professor Gunzburg and Professor De Munter, who have already received recognition by twenty foreign committees.

The important questions proposed are: (a) Rheumatism and physiotherapy treatment. Papers by Professors Gunzburg for Belgium, Van Breemen for Holland, Wierzejewsky for Poland. (b) Affections of the Central Nervous System and Physiotherapy. Paper by Doctor Delherm for France.

Acceptance may be sent from now on to Doctor Dubois-Trepagne, Secretary-General, 25 Louvrex Street, Liege, Belgium, with the dues of 150 Belgium francs. This will facilitate the organization of a Congress which will be noteworthy among the sessions of 1930.

Exhibition of Portraits of Physicians and of Scientists in the Medical History Room at the Lane Library, December 2-14, 1929. A large collection of line engravings, etchings, lithographs, mezzotint portraits of illustrious medical men and of those responsible for the development of modern science. From the collection of Professor Herbert M. Evans and William J. Kerr, M. D., of the University of California.

Fire at the University of California Hospital.—That the fire which occurred in the x-ray department of the University Hospital last month was not a sad repetition of the Cleveland disaster was entirely due to the precautions which had been taken immediately thereafter to prevent such possible recurrence. Only films in use during any one day are kept in the x-ray department. All others are stored in an outside fire-proof storage vault. Provision also had been made for a free ingress of air in the event of fire, which would permit proper oxidation and thereby avoid the possibility of explosion with consequent liberation of deadly gases.

The fire at the University of California Hospital was simply a fire—there was no explosion of any sort.

Dr. Lionel Schmitt, Acting Dean of the University of California Medical School, states that even the possibility of fire will be eliminated hereafter by the use of non-inflammable films, which, it is hoped, in the near future will be so perfected as to equal in value the present inflammable films.

The criticism that followed the lurid newspaper account of the occurrence makes it advisable to

apprise members of the profession of the actual facts in this case, that the undue fear instilled in the minds of patients of a possible fire hazard in hospitals may be intelligently combated.

Committee of Revision of the Pharmacopoeia of the United States of America 1920-1930.—The extent of present day use of deleted Pharmacopoeial drugs is one of those decennial questions which always causes some discussion when the time for a new Pharmacopoeia approaches. A number of efforts have been made in the past to secure exact facts upon which to base correct judgments for the U. S. P. scope and again an appeal is made to physicians, for help in making such a study.

Copies of a questionnaire, indicating the opinions of physicians concerning medicinal products which are official in the last revisions of the U. S. P. will be gladly sent by the chairman of the Committee of Revision to anyone who is interested. Write E. Fullerton Cook, 636 South Franklin Square, Philadelphia, Pa.

CORRESPONDENCE

Subject of Following Letter: Vienna Clinics

Vienna, Austria,
October 24, 1929.

To the Editors,
California and Western Medicine.

A brief review of some of the activities of the Vienna clinics will probably be of interest to the readers of CALIFORNIA AND WESTERN MEDICINE. The postwar vicissitudes this poor country has experienced have not apparently decreased the importance of Vienna as a great medical center. Visiting it for the first time since the war, I had anticipated defects in organization, as compared to the smoothly running machinery I had observed in prewar periods. Such was not the case, however. The various institutions which go to make up the Vienna Medical School are all apparently functioning normally, and, save for evidences here and there of economy in administration, seem to be working with the same efficiency as they did before the war. The vast amount of clinical material is bewildering. The Allgemeines Krankenhaus, with its two thousand beds, is but the nucleus of material. With the affiliated institutions, such as the Allgemeine Polyclinic, the Heart Station, the medical, gynecological, and nose and throat clinics near by, and further from the center, the Franz Josef Spital, the Jubiläums Spital, the Kinder Kranken Institute, the Wilhelminen Spital, and many others too numerous to mention, is presented a clinical mass of about twenty thousand beds for teaching purposes. In addition to this, the Landenstatten Am Steinhof (Hospital for the Insane) four thousand beds, and the seven thousand beds of the Home for the aged, supply ample material for pathological teaching.

It will thus be seen that pathological material for teaching purposes is very great. Vienna has always afforded exceptional facilities for the study of pathology. Frankl's course at the Frauen Klinik is most comprehensive, as he is the foremost man in Central Europe in his field; large numbers attend his classes.

Erdheim, at the Jubiläums Spital, is a teacher in pathology of rare ability. He has been active in the department of pathology here for twenty-eight years, and has collected a mass of records and statistics unequalled elsewhere in the world. It is estimated that his experience covers approximately eighty thousand

autopsies, and his records, being well kept, the statistics are most valuable.

The Pathological Institute has perhaps the finest collection of pathological specimens to be found in the world. It consists of between 5000 and 10,000 specimens, some of them dating back one hundred years.

Of the clinics for internal medicine, the Wenckebach Clinic is probably most famous for its work in the field of cardiovascular diseases. Wenckebach, himself, a leader in the field of cardiology, has gathered a brilliant coterie of men in his department. Scherf, a young man of thirty years, yet one of the keenest cardiologists I have ever met; Porges, Hitzenberger, Elias, are all clinicians of great ability, and rare diagnostic acumen. The personnel of this department is somewhat depressed at present because of the loss of their chief, Wenckebach, who retired from teaching work on October 1. At the present writing the name of his successor has not been announced.

The clinic of Professor Luger (formerly of Peter Bent Bingham Hospital in Boston) in the Ortner Clinic is very popular with Americans, as is, of course, the Chrostek and Kovacs clinics. Kovacs is probably one of the most brilliant of the teachers in internal medicine. At the Heart Station the work of Dressler engages the attention of a great many American students. His demonstrations are well presented both in clinical cardiology and electrocardiography.

In this same institution the brilliant fluoroscopy of the heart by Rosler must be mentioned. He is a man of rare ability, deservedly popular as a teacher. He has a wonderful collection of films illustrating congenital hearts, and his interpretations of the screen picture are most interesting and instructive. No less should be also said of Zdansky in the Wenckebach Clinic, in the x-ray examinations of chests.

The chief work in tuberculosis is found at the Wilhelminen Spital in the clinic of Professor Neumann. There abundant opportunity is afforded the student to study the methods of Neumann, who is the outstanding man in this department of medicine in Vienna. The principles underlying the treatment of tuberculosis are the same here as elsewhere, except that there is a much greater appreciation of the value of tuberculin in therapy than exists in the clinics and among the practitioners of the United States. Artificial pneumothorax is freely employed, and frequently in quite early cases. Phrenectomy is employed to a great extent. Thoracoplasty is not very much used. Neumann does not favor it because of the very high attendant mortality. The "lungenplombe" operation, revived by Denk, now in Graz, and Hauke of Breslau, has found an enthusiastic advocate in Neumann.

This operation consists in resection of the second rib in the interscapular space, separation of the parietal pleura from the thoracic wall, and extrapleural compression by means of a paraffin mass. I have seen cavitation extending throughout the upper lobe satisfactorily compressed by this means. Its advantage over the extensive thoracoplasty consists in a mortality which is practically nil, and the fact that remaining functioning lung tissue is not permanently made useless, as is the case with the more formidable surgical procedure. It is rather interesting and significant that, when in Berlin two months ago, I found the "lungenplombe" operation much in use at the Sauerbouch Clinic.

This rather sketchy review of the clinical facilities of the Vienna school reveals the fact that abundant opportunity is presented to the postgraduate for study. Is this wealth of material being used to the best advantage? Much of it is the usual material presented to the casual medical man—presented largely by instructors who have learned enough in English to be understood by their classes; and when I say the casual medical man, I am clothing with the mantle of charity the qualifications of a considerable number of Americans at the Vienna school. A great many of these courses are very elementary, and much of the really scientific work is entirely overlooked by those who are apparently here to "brush up." For instance

I spent yesterday morning with Doctor Hitzenberger, of the Wenckebach Clinic, who is carrying on, under a grant from the Ella Sachs Fund, a most interesting research on the gas content of the venous and arterial blood in cardiovascular diseases. I was the only American present!

By this I do not mean that thorough work is not being done by a great many earnest, well-trained men who come here to do conscientious work. There are large numbers of such men here, and the experience of such men under the influence of the Vienna school has greatly enriched American medicine in the past.

There is much to be done in the way of better organization of the work for presentation to the postgraduate. This the American Medical Association of Vienna is now trying to do by the arrangement of intensive courses in the various departments of medicine, which arrangements, when completed, can be announced at home to prospective visitors through the medium of our medical journals.

Very truly yours,
GEORGE H. EVANS.

**Subject of Following Letter: Los Angeles
"Wine Tonic" Ordinance**

Los Angeles,
November 7, 1929.

To the Editors:

Herewith find copy of a recent so-called wine tonic ordinance passed by the city council of Los Angeles, and in the same or modified form now up for consideration before the councils of several other California cities. On its face the ordinance would seem to be a violation of professional rights of physicians, since no exemption is made for prescriptions of any kind. The ordinance should be of interest to the many physicians who believe that professional rights should be protected and is worthy of perusal by all physicians. The ordinance as passed is enclosed.

Very truly,
WILLIAM DUFFIELD, M. D.

* * *

Ordinance No. 65,112

An ordinance prohibiting the sale of wine tonics in the city of Los Angeles.

The people of the city of Los Angeles do ordain as follows:

Section 1. Definition—Wine Tonics: The phrase "wine tonics" shall mean and include any tonic or any medicinal preparation containing one-half of one per cent or more of alcohol by volume, which is capable of being used as a beverage.

Section 2. It shall be unlawful for any person, firm or corporation to sell, serve or give away within the city of Los Angeles any wine tonic or wine tonics, as defined in Section 1 hereof.

Section 3. That any person, firm or corporation violating any of the provisions of this ordinance shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be punished by a fine of not to exceed Five Hundred (\$500) Dollars, or imprisonment in the city jail for a period of not exceeding six (6) months, or by both such fine and imprisonment.

Every such person, firm or corporation shall be deemed guilty of a separate offense for each violation of any provision of this ordinance which is committed, continued or permitted by such person, firm or corporation, and shall be punishable therefor as provided by this ordinance.

Section 4. The city clerk shall certify to the passage of this ordinance and cause the same to be published once in the Los Angeles Daily Journal.

I hereby certify that the foregoing ordinance was introduced at the meeting of the council of the city of Los Angeles of October 16, 1929, and was passed at its meeting of October 23, 1929.

ROBT. DOMINGUEZ,
City Clerk.
JOHN C. PORTER,
Mayor.

Approved this twenty-fourth day of October, 1929.

TWENTY-FIVE YEARS AGO*

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Vol. II, No. 12, December 1904

From some editorial notes:

... *Second Volume.*—With this issue the Publication Committee hands you the closing number of the second volume of your journal. It is by no means, as yet, fully the journal your committee would have it, but we feel that it is a pretty good journal and that you need not be ashamed of it. It is clean from cover to cover, so far as we know; it has not deviated one particle from the line marked for it; we have refused to print page after page of advertising that did not conform to the "Principles of Ethics of the American Medical Association." Were we to interpret these "principles" as loosely as have the trustees of the American Medical Association, very many dollars could have been added to the revenue of the society; but your committee would not. The work has not been easy and we have often fallen far short of our desired result, but we have given you of our very best, and no man can do more. . . .

... *Unkind Slander.*—It is true that your Publication Committee and your Council, through the pages of your journal, have called the attention of the trustees of the American Medical Association to certain of their methods in conducting the *Journal of the American Medical Association* which do not seem to conform to medical ethics as promulgated by the Association; but this is far different from an "attack" based upon and due to nothing more substantial than a "factional" feeling. We feel quite sure that no body of physicians in this country have a more deeply rooted affection for the American Medical Association. So proud are we of it and so much has it grown to mean to us that we cannot bear to see it doing even the least little thing that seems inconsistent with the very best and highest in medicine and medical ethics. . . .

... *Watch the Legislature.*—Elsewhere in this number of the journal will be found a list of the gentlemen who have been chosen to make and unmake and amend the laws of the State of California for the session beginning January 1, 1905. Study this list carefully. Bring up the matter in your county society, and discuss the personnel of the men from your section of the state. . . .

From a letter in the Correspondence Column:

... For at least five years, quiet, personal, effort had been made by others to induce the *Journal of the American Medical Association* to become decent, but without result; no one would speak out, and little could be done when all other medical journals in the land could point to the official organ of the physicians themselves as excuse for advertising absolutely rotten, vile, and worthless stuff, nostrums, etc., *ad nauseam*. The editor expected to get plenty of abuse, and he has not been disappointed; some of it has approached pretty close to personal slander. Fortunately for him, every step taken, every matter of policy, every decision connected with the advertising question has been gone over by the whole Publication Committee. . . .

From the minutes of the California Academy of Medicine:

... Meeting held in San Francisco, October 25, 1904. The president, Dr. T. W. Huntington, being in the chair. . . .

... Remarks on the diagnosis and treatment of fractures of the neck of the femur.

Dr. H. H. Sherman reported several cases of in-

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

juries about the hip which illustrate the importance of a special symptom, viz., the inability of the patient to lift his foot off the table when lying on his back. . . .

From the minutes of county medical societies:

... *Redlands Medical Society.*—The regular monthly meeting of the Redlands Medical Society was held in the Y. M. C. A. parlors on Wednesday afternoon, October 19, 1904. The members present were Doctors Evans, Browning, Tyler, Pounds, Strong, Major, Payton, Taltavall, Moseley, Wheat, Blythe, Sanborn, and Shreck. . . .

... *Fresno County.*—For the enlightenment of the journal readers, I will state that Dr. — is the president of our society and has always been a much-respected and popular member. Recently Dr. — has equipped his offices with a static machine, Finsen light, hot-air ovens, vibrating apparatus, etc., and has styled his offices a "Therapeutic Institute," and used the daily papers to a marked extent in giving publicity to these features. This procedure was frowned upon by many members of the society as going beyond the bounds of ethics. . . .

... *San Joaquin County.*—The last meeting of the San Joaquin County Medical Society was held at the office of Dr. Barton J. Powell. Two cases of hemorrhage after tonsillotomy were reported. One case was of especial interest, being that of a healthy boy of fifteen of good family history. The hemorrhage was controlled with a tonsillar tourniquet and patient discharged. One week later another hemorrhage occurred, but was checked with epinephrin solution without pressure. The patient rapidly regained his normal condition. The case was freely discussed and the value of the tourniquet in these very occasional cases appreciated. The value of the snare over the tonsillotomy brought out liberal discussion. . . .

... *San Francisco County.*—Meeting called to order at 8:45 p. m., November 8, the president, Doctor Rosenstirn, in the chair. . . .

... Dr. S. G. Nagel presented a case of amblyopia from wood alcohol poisoning, and said: "Maybe some of you have noticed a report by Dr. Casey Wood of serious results following ingestion of wood alcohol. . . ."

... Doctor Barkan said, in discussion: "In relation to this case presented by Doctor Nagel, I will simply say that it is indeed a very interesting one, and the first I have seen. They are not very frequent here. I am much obliged to Doctor Nagel for this opportunity to observe a case of this sort. . . ."

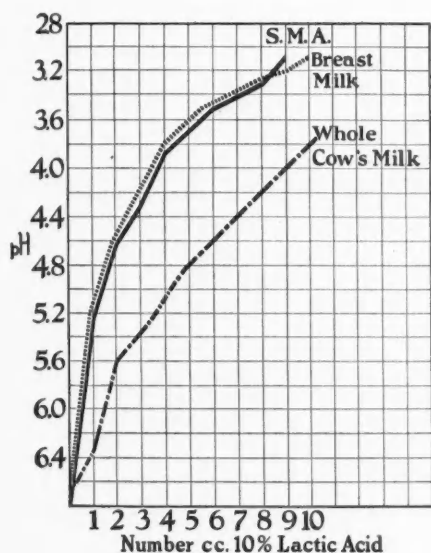
... Dr. S. J. Gardner presented some clinical notes on "An Unusual Infection in the Bones of the Foot."

Doctor Gardner said: "We wish to show the specimen of this case as it is one of unusual interest, especially to California physicians. A formal report will appear at some later time, as we are doing some work that will take considerable time and we do not wish to report the case formally until this work is completed. . . ."

"... In the tissues the parasite is similar to that first described by Wernicke in 1892; and to that described by Rixford and Gilchrist in their cases of so-called 'protozoan infection,' appearing in the *Johns Hopkins Hospital Reports* for 1896. The parasite has a coccidium-like appearance, being about five to twenty-five microns in diameter. . . ."

... Doctor Ophüls said: "If I may, I should like to say a few words on this very interesting subject. It seems to me that this affection is almost entirely limited to California. There is only one case reported in literature outside of California and that one occurred at Buenos Ayres in the Argentine Republic. Lately a similar case seems to have been observed in Boston. All cases except these, so far as known, have had their origin in California, and most of them in the San Joaquin Valley. As far as the parasite is concerned, it was as Doctor Halton has said, first regarded as a protozoan. . . ."

Buffer Value of S. M. A.



The buffer chart at the left shows the wide difference between the buffer curve of Breast Milk and cow's milk and the similarity of the buffer curve of Breast Milk and S.M.A. This explains why it is not necessary to add an acid to

■ S. ■ M. ■ A. ■

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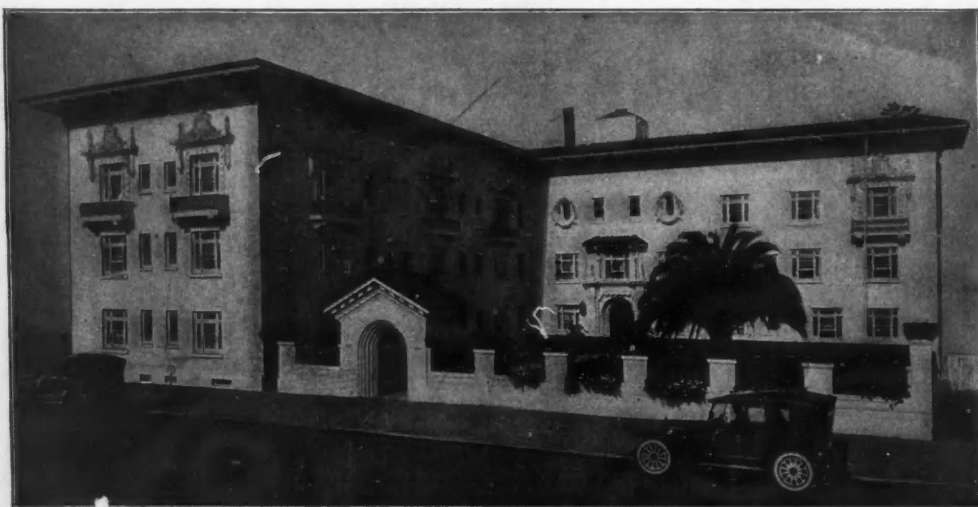
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